IRON TRADE REVIEW
STEEL

NO JOB IS TOO BIG FOR OXWELDING

YOUR application of Oxwelding to production need not be deferred because its effective employment in your plant seems difficult or impossible.

The Linde Service and Engineering Organization, qualified by years of experience in adapting this modern metal-working process to the needs of hundreds of highly specialized industries, stands ready to help you apply Oxwelding to your particular production problem.

A wealth of oxwelding information, backed by the resources of one of the country's great commercial research laboratories, is available to you. If your production problem involves welding, investigate these facilities.

THE LINDE AIR PRODUCTS COMPANY, THE PREST-O-LITE COMPANY, INC., OXWELD ACETYLENE COMPANY, UNION CARBIDE SALES COMPANY,

Units of UNION CARBIDE AND CARBON CORPORATION

General Offices . . . New York UCC Sales Offices . . . in the Principal Cities

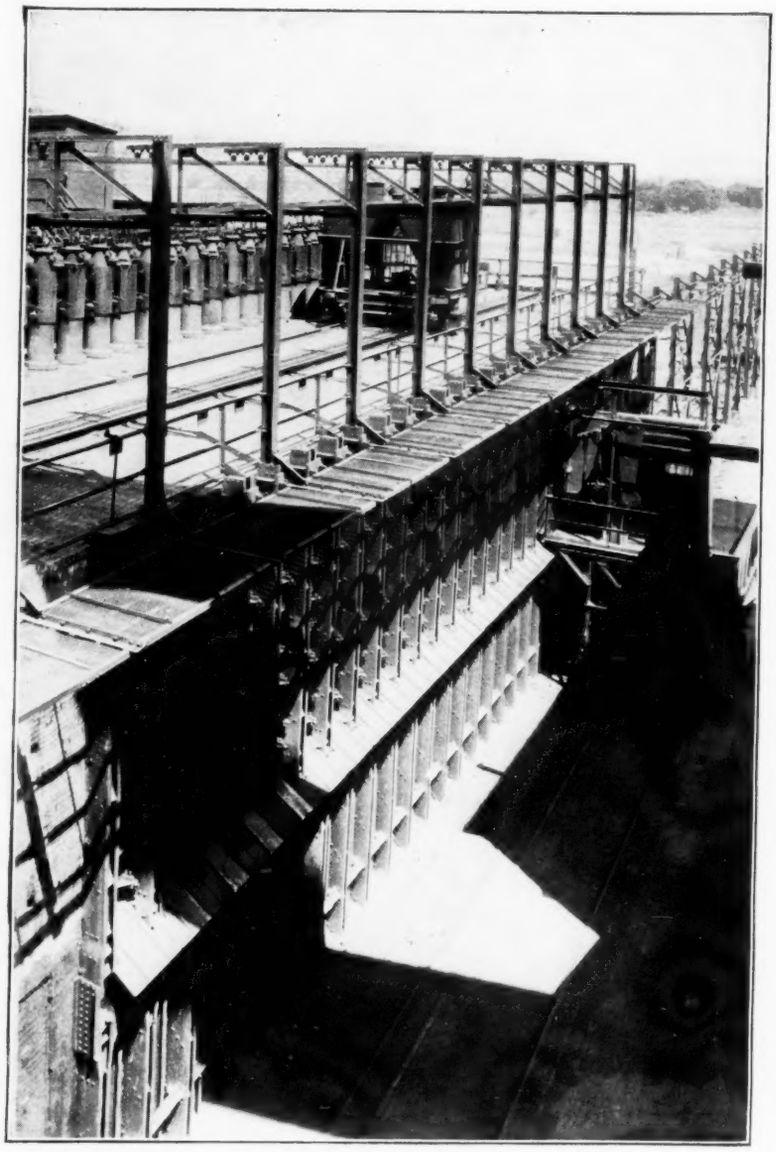
65 Linde plants . . . 48 Prest-O-Lite plants . . . 174 Oxygen Warehouse stocks . . . 156 Acetylene Warehouse stocks

42 Apparatus Warehouse stocks . . . 245 Union Carbide Warehouse stocks

A CLEAN INDUSTRIAL OPERATION

Cities can point with pride to Becker Oven Plants producing gas and coke, as clean, diligent servants of the community. Smoke, smell and grime are not by-products of that service. These plants, engineered in the light of important research by Koppers, tempered by long experience in meeting community needs, provide clean, efficient production facilities.

Consult us on your gas and coke production problems.



KOPPERS CONSTRUCTION COMPANY

KOPPERS BUILDING PITTSBURGH

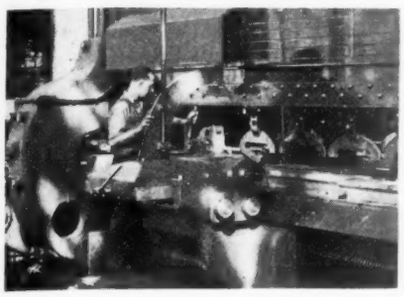
Vol. 87, No. 7, August 14, 1930, issue of STEEL, published weekly at Cleveland, O. Entered as second class matter at the post office, Cleveland, O., under the act of March 3, 1879. Subscription $6 a year in U. S. and Canada; foreign £2:0:0; single copies 25c.

EDITORIAL STAFF
E. L. SHANER
EDITOR
ASSOCIATE EDITORS
E. C. BARRINGER, A. J. HAIN, G. H. MANLOVE, E. F. ROSS, J. D. KNOX, W. H. LLOYD
New York
E. C. KREUTZBERG, B. K. PRICE, H. R. SIMONDS
Pittsburgh
W. G. GUDE
Chicago
F. B. PLETCHER
Washington
L. M. LAMM
London
VINCENT DELPORT

IRON TRADE REVIEW
STEEL
Published Every Thursday by
PENTON PUBLISHING CO.
PENTON BUILDING, 1213 WEST THIRD ST., CLEVELAND, O.
C. J. STARK, *President* J. D. PEASE, *Vice President*
F. V. COLE, *Secretary*

ADVERTISING STAFF
G. O. HAYS
BUSINESS MANAGER
New York
J. F. AHRENS, E. W. KREUTZBERG
Pittsburgh
S. H. JASPER, C. B. HUMPHREY
Chicago
L. C. PELOTT, C. A. WARDLEY
Cleveland
JOHN HENRY, R. C. JAENKE

PRODUCTION ◆ PROCESSING ◆ DISTRIBUTION ◆ USE



Making 60 feet of electric welded pipe per minute. Page 43.

THIS WEEK:

COAL is king, oil is the heir apparent, and electricity is the pretender to the throne, remarks a commentator on industrial progress. Interesting "if true." Electricity is not a pretender; it makes no pretense to being a fuel. It is like a prime minister extending the king's power. Some prime ministers have more power than kings. Fuel's sphere of usefulness is continually being expanded by electricity. A new electrically driven industrial locomotive, described in the equipment section, page 72, illustrates this.

STEEL is published by the Penton Publishing Co., Cleveland, O. Member, Audit Bureau of Circulations; Associated Business Papers Inc., and National Publishers Association

BRANCH OFFICES:

New York	220 Broadway
Chicago	Peoples Gas building
Pittsburgh	Oliver building
San Francisco	Claus Spreckels building
Washington	National Press building
Cincinnati	Bell block
London	Caxton House, Westminster, S.W.I.
Paris	9 Rue de Londres
Berlin	Dahlmerstrasse 64 A. Lichterfeld-West

Subscription in the United States, Canada, Cuba and Mexico $6 per year; in Great Britain and European countries £2.0:0.

Entered as second class matter at Post Office at Cleveland under the Act of March 3, 1879.

Copyright 1930 by the Penton Publishing Co.

CONTENTS

Aug. 14, 1930

THIS WEEK IN STEEL 21

Hoover Confers on Drought; Farm Buying Power Shrinks 23
Few Steel Wage Rates Cut; Affect Less Than 1 Per Cent 25
Begin New Attack Against Russian Manganese Ore 26
Soviet Government Buys Five More Hydroelectric Generators 26
July Ingot Rate Falls 18 Per Cent; Lowest in Six Years 27

Industrial Men in the Day's News 28
Obituary 30
Here and There in Industry 31
Mirrors of Motordom 32

EDITORIAL—Include Sound Labor Policy in Building for Future 34
THE BUSINESS TREND—Drought Is Sinister Factor in Business Outlook 36

Producing Electric Welded Line Pipe—By A. H. Allen 43
Commercial Hardening by Cyaniding Process—Part III—By E. F. Davis 48
Building Forming Mill for 26-inch Welded Pipe 54
Pig Iron Production Statistics for First Half of 1930 55
Powerful Milling Machine Speeds Billet Chipping 57
Texas Is Arena of Conflicting Forces in Steel Distribution—By W. S. Doxsey 58
Scanning the Technology of Steel 67
Review of New Books 71
Machine Tools and Shop Equipment 72

MARKET SUMMARY 81
MARKET REPORTS AND PRICES 82-112
CONSTRUCTION AND ENTERPRISE 115
NEW TRADE PUBLICATIONS 120
WHERE-TO-BUY DEPARTMENT 123
ADVERTISERS' INDEX 156

Have You A White Elephant In Your Plant

How much capital tied up in surplus stocks? How many sizes that you may never use? Perhaps there is stock which was bought for future use but which never found its way into production; stock taking up valuable factory space and holding part of the working capital. The cost of this "White Elephant" Material is often surprising.

Without the incentive of a speculative market, more manufacturers are today buying steel to meet current requirements. Buying it cut to size and getting just what they want—when they want it.

There is no waste of material, no capital tied up, or storage space consumed. It may pay you to do likewise.

A 'phone call, wire, or letter to the nearest Ryerson Steel-Service Plant will bring an immediate shipment of any steel you need.

Write for the Ryerson Journal and Stock List—"Key to Immediate Steel"

Bars	Refined Iron	Boiler Tubes and Fittings	Tool Steel
Structurals	Turned Ground and Polished Shafting	Welding Rod	Concrete Reinforcing
Rails	Screw Stock	Forging Bars	Firmtread Plates
Plates	Strip Steel	Babbitt Metal	Small Tools
Sheets, Blk. and Galv.	Rivets and Bolts	Allegheny Metal	Machinery, etc.
Sheets, Full Finished		Alloy Steel	

JOSEPH T. RYERSON & SON INC.

Plants: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City

Representation in: Minneapolis, Tulsa, Rockford, Kansas City, Houston, Dallas Newark, New York, Denver, Los Angeles, San Francisco

RYERSON

STEEL-SERVICE

Volume 87 Number 7

IRON TRADE REVIEW
STEEL

PRODUCTION ◆ PROCESSING ◆ DISTRIBUTION ◆ USE

This Week in Steel

NOT on ticker tape or sporting pages or even longer on weather forecasts are the eyes of the nation turned. Hopefully to the skies is everyone looking; a few clouds are sufficient to excite, a bank of them to arouse unalloyed expectancy. Cooler weather over much of the north central region, where drought damage has been most severe, is not mitigating the injury to grains and truck and fruit, and one more rainless week will make the damage irreparable for this season. To the iron and steel industry the effect is negative—to diminish the market for farm implements, tin plate for canning, wire fencing, galvanized roofing, steel barns, automobiles, tractors. To the government the situation calls for positive action (Page 23). Thursday of this week the President confers with governors of the stricken states, Friday with farm and financial leaders. The interstate commerce commission has waived all formality to permit immediate reductions of freight rates to expedite food into and livestock out of distressed areas. By another week, perhaps, the drought will cease to be news and an easily-bored public will require other news stimulus, but from the farmer and his purchasing power the grief will not pass so quickly.

Steel's Treatment of Labor Enviable

Those who a few months ago glossed over the business situation and shied at the words depression and unemployment are today glib in using them. Ten years ago any reference to the 12-hour day and 7-day week was veiled; they were the skeleton in the closet, practices no one cared to defend yet seemingly inescapable concomitants of the continuous processes. Today, however, the steel industry is out in the open, and those who have abolished these practices are glad to stand up and be counted. Secretary of Labor Davis started something last week when he assailed un-named producers in the Birmingham district for maintaining the long day, especially when shorter shifts would diffuse employment, and the steel industry is 100 per cent behind him (Page 34). . . Speaking of the South, as it veers from agriculture to industry it finds labor a vexing problem. Noted speakers at the University of Virginia annual forum proposed a labor policy for the South, the cornerstone, of course, being the open shop (Page 25). . . Last fall the President proposed that maintenance of wage rates be industry's contribution to a more stable business situation. It speaks well for steel that wage adjustments since then have affected less than 1 per cent of its employes. (Page 25).

Russia, Appeased, Under New Fire

Just as the soviet government, American engineers and manufacturers of equipment, domestic consumers of manganese ore and the administration were relieved to find Russian manganese fading from the news, it bounces

Drought may check sales of wire products and tin plate but it aids buttweld pipe. Farmers with water supply erect ¾-inch lines about 30 feet apart, with pipe supports spaced 40 feet. This farmer is relying on irrigation to bring the patch in the center to the growth depicted on either side.

back. Secretary Mellon has been asked by domestic producers to "suspend the liquidation" of manganese imports until it can be determined if the antidumping provisions of the tariff are being violated, and if so what additional duty should be assessed. There is hope that the stand of the government against a blanket embargo on Russian products will appease the soviet, as new equipment orders are developing. (Page 26).

Great Interest in Welding Pipe

Pipe is bigger production than market news. Increased demand for electrically welded steel pipe of large diameter has created a new problem in forming prior to welding. A Cleveland manufacturer has designed a 12-stand mill which will automatically form pipe from 18 to 26 inches in diameter at speeds up to 100 feet per minute. Each stand is individually driven and all motors are controlled to give correct roll speed (Page 54). . . . One manufacturer of welded pipe has produced nearly 2000 miles of 4 and 6⅝-inch diameters in the past year. One unit is now turning out 8-inch pipe. Speed of automatic forming and welding is from 40 to 60 feet per minute (Page 43). . . . Flaws in billets are removed by chipping, a laborious and expensive operation, but this task can be simplified by a newly designed machine capable of either milling or planing action. Billets of any cross section and length up to 30 feet are handled quickly, being moved to and away from the machine on a conveyor. The cutter head is capable of six motions controlled through a single lever. One man can chip the average billet in about 30 minutes. (Page 57).

Statistics Afford Slight Comfort

Statistically, only the unfilled tonnage report of the United States Steel Corp. for July 31 offers any comfort this week. An increase of 53,991 tons, or 1.36 per cent, after four months of decrease brought the Corporation's backlog up to 4,022,055 tons. The explanation is that the Corporation curtailed operations more drastically than bookings warranted, but 1.36 per cent is a negligible margin. Should August show an increase it will be time enough to be cheered (Page 30). . . . Drastic liquidation of production is the story of July steel ingot statistics. A daily rate of 112,823 tons was the lowest since September, 1924; it was lower even than last December, thought at the time to be the bottom (Page 27). . . . In the semiannual compilation of pig iron production statistics by the American Iron and Steel institute is revealed a 15.6 per cent decline in the first half of 1930 from the first half of 1929, and a loss of 11.3 per cent from the last half of 1929. In any event, the total, which includes coke and charcoal iron and ferroalloys, attains the imposing height of 18,470,652 gross tons, equal to an entire year's output 30 years ago. (Page 55). Furnaces for cyanide hardening of steel must be designed and heated properly to give consistent and satisfactory results. A new development in this direction is a continuous-type unit in which the work is suspended on a rotating screw and conducted through the bath. Production has proved excellent. Safety precautions in cyaniding are given in this authoritative discussion of the widely-used hardening method. (Page 48).

Would Higher Prices Prod Steel Buyers?

Whether current prices for steel are remunerative depends, of course, upon individual mill practice, but with demand as low as it is and consumers ordering in dribbles, requiring constant roll changing, there is not much profit left even for the lowest-cost producers. Red ink, therefore, would seem a powerful discourager of further reductions in prices. Now, it is being asked, would an advance improve the market? Supposing early in September, provided demand evidenced the usual fall upturn, steel were put up about $2 or $3 a ton; would it stimulate buying? Some factors believe it would; others say any rise would be untimely and would react. At any rate, such a move is under consideration. . . . Rarely have the iron and steel markets been so characterless. There is no well-defined drift downward, nor one upward. Occasional reports of improvement emanate, but they are too scattered to make a convincing pattern. Although the automobile manufacturers and parts makers have been operating ten days since their vacations ended, they are not buying. (Page 81).

Texas Again a Battleground

Competition in steel distribution in Texas is undermining the established and orderly system of serving consumers through independent warehouse distributors. Adjacent areas also are affected. A complex transportation system is given the blame for chaos, with mills fighting for direct-to-consumer business. Mill warehouses must yet justify themselves economically, nevertheless a better plan of merchandising may be in the making. (Page 58).

Hoover Confers on Drought; Farm Buying Power Shrinks

POLITICALLY and industrially, the drought continues the chief concern of the nation. Governors of the states most seriously affected meet Thursday of this week with President Hoover to canvass the situation. Friday the President confers with agricultural leaders. The interstate commerce commission has authorized the granger railroads to adjust rates immediately to expedite the movement of food into stricken areas and livestock out of them.

Rising prices in the grain markets suggest that the oversupply of wheat may be automatically corrected by the deficiency in other grains. Canners are apprehensive over late crops, and by the same token so are makers of tin plate and cans. Iron and steel producers still are gloomy over prospects of fall business in products in most demand in farm areas. Each succeeding week of drought does damage which the fall rains cannot repair.

Financial Relief for Dry Areas Is Washington Goal

Washington—Foremost in topics to be considered at the governors' conference here Thursday will be financial relief for drought-stricken areas. Further government credit is believed imperative, as financial obligations of a large portion of the farmers are endangered by the probable failure of their money crops this fall.

The railroads expect to take prompt action to make effective their permission from the interstate commerce commission to reduce rates without formality, to bring food into affected areas or move livestock to regions where pasture is plentiful.

Although certain areas of the country east of the Rockies have only a mild deficiency in rainfall, the condition in the farm and fruit states is considered most serious. Particularly in Illinois, Iowa, Indiana, Michigan and Wisconsin has the dry spell burned crops. It seems doubtful whether heavy rains this week would bring back much acreage, and by next week the damage will be irreparable.

In certain areas irrigation is being resorted to, but the relief from this emergency measure is largely limited to truck and fruit farms. Considerable demand for buttweld pipe, largely ¾ and 1-inch in diameter, has been stimulated.

Official Washington believes the reaction upon the iron and steel industry will be negative. The only positive assistance might be requirements for pipe and other materials for irrigation purposes. But financial stress of the farmer can only further contract his power to buy fencing, roofing, steel barns and outbuildings, implements and automobiles. Some reduction in need for tin plate for fall crops seems inevitable.

See Farmer Buying Power Curtailed Year Hence

Cleveland—Mixed opinions are current on the effect the current heat spell will have upon rural districts. While a feeling is expressed that a soaking rain of a week will start farmer psychology in the opposite direction, to an optimistic state, and repair much of the damage already done to crops and stock, others say that damage may be irreparable and rain could not help some crops, as corn, which are now in bad shape.

The drought may be a blessing in disguise, say some, to reveal to the farmer class that he has too much under cultivation and indirectly prove the fallacy of farm-relief measures and bills, driving home the fact that this country can absorb a certain amount of foodstuffs that the rural districts cultivate.

Certainly, the effects will be felt eight, ten and twelve months from now when present prolonged heat is but a memory. For when it comes time for the farmer to revise his plans made in early 1930 to purchase luxuries and even some necessities, he will make this year's possessions perform the task for next year. Likewise will the farm implement people be affected, and motor car manufacturers.

Chicago Feels Effect on Wire, Tin Plate, Tools

Chicago—Estimates already are being made as to the probable effects of the widespread drought on iron and steel markets. Tin plate for food pack production, wire products and farm equipment will bear the brunt of the lowered farm buying power.

Wire mills expect woven fencing

Angles and Cable Support Huge Awning

ONE ton of angle iron and 5000 feet of ⅜-inch wire cable support this sun awning which John H. McClatchy, owner of a shopping center just outside the Philadelphia city at Sixty-ninth street, erected to prevent the summer sun drying up the trade of his tenants. The awning, which also required 3200 yards of bunting, 4000 yards of webbing, 4500 feet of rope and cost $2500, is 85 x 200 feet. Buildings on one side are three stories high, on the other two stories. A. Smith & Son, Philadelphia, erected it. Business is reported a shade better.

and nails orders to be reduced 30 per cent or more in some localities from the late summer farm purchases of recent years, although it is said that in other localities the rural markets may not be much below what is regarded as normal. It is pointed out that the corn crop loss, while severe, may not be reflected as much as is now indicated in actual cash losses, owing to the higher prices for the reduced crops that may be marketed.

Tin plate production will be affected seriously. Vegetable crops for the food packing industry chiefly are peas, corn and tomatoes. The season's crop of peas, already passed, resulted in only 30 to 50 per cent of the normal pack, particularly that coming from the Wisconsin area.

It is estimated the corn pack may be off 40 per cent. Much of the tomato crop has been ruined, particularly in the southern Illinois areas where most of the product is received for packing by the plants in this territory.

Farm equipment sales will be impaired by the reduced crop income of farmers, but the export orders for tractors and combines now closed and being negotiated with Soviet Russia place the industry in a more favorable position than had been expected. A falling off in tillage tool sales is bound to result. If steel producers and farm equipment sales offices find autumn tillage demand within 25 per cent of that of the last two years they will be agreeably surprised.

Drought Damage Not Yet Apparent at Pittsburgh

Pittsburgh—Only a moderate degree of concern is felt by producers of wire products and tin plate in the Pittsburgh district over the effect the drought may have upon demand for their products.

Makers report that to date there is no direct evidence of lighter purchases as the result of damaged crops, although some curtailment is expected if only because of the reduced purchasing power of the farmer in the near future.

The annual pack of peas is out of the way. Tomatoes have been damaged in some sections but as in the case of sweet corn the extent is unknown.

On the other hand, to illustrate the old saying of "it's an ill wind, etc." a pipe producer reports the receipt of rush orders from West Virginia for several carloads of pipe for temporary water lines.

The theory is also held, however, that the recent unseasonable weather has had a restricting effect on general business and that lower temperatures indirectly would contribute more vigor to activity.

Billion-dollar Case Judge and Daughter

SELDOM is it given to a common pleas court judge in a comparatively small community to sit in an industrial case of the importance of the Bethlehem-Sheet & Tube merger contest. Judge David G. Jenkins, however, is not overawed by technical questions that arise, nor does he make believe he understands them when he doesn't. "Wait a moment now; let me get this," he frequently says, interrupting lawyers. And he makes the point clear before the examination proceeds. He has the lawyers' respect and confidence

Merger Trial Halted Until Wick Executor Is Named

Death of Myron C. Wick, one of the plaintiffs in the suit to enjoin the merger of the Youngstown Sheet & Tube Co., and Bethlehem Steel Corp., interrupted the trial in common pleas court in Youngstown, O., last Friday.

When court resumed Tuesday, this week, attorneys for the plaintiffs raised the question of possible legal difficulties until the heirs of Mr. Wick could decide to continue or withdraw from the case. The trial was then adjourned until Wednesday so that Mr. Wick's will might be presented to probate court, and an executor named. Mr. Wick is survived by his wife and two minor children.

The principal contender against the merger is the International Shares Corp., in which Cyrus S. Eaton is heavily interested. Judge David G. Jenkins stated that the trial would proceed, merely allowing time for members of the Wick family to decide if they wished to withdraw.

Last week was devoted mainly to a battle between auditors, Ernst & Ernst, for the antimerger faction and Price, Waterhouse & Co., for the proponents. Hassel Tippit, Cleveland manager for the Ernst firm, was on the witness stand four days disputing the Price, Waterhouse audit. He was to be recalled to the stand this week.

Issues Membership Roster

Cleveland Engineering society has published as the July issue of *Cleveland Engineering* a complete membership directory. The membership listing is given both alphabetically and by company affiliation. Other features of the directory are the society's constitution, purposes and rosters of professional divisions, and other society information of general interest.

Few Steel Wage Rate Cuts; Affect Less Than 1 Per Cent

"I heard a man say the other day that wages should come down. I said, Oh, no, wages are not coming down; you can make up your mind to that fact. If you are going out to sell your goods and eliminate your profit, and expect to get it out of the men in the mills, why you are greatly mistaken."

AND as James A. Farrell, president, United States Steel Corp., predicted three months ago in his talk to the American Iron and Steel institute, wages—meaning wages rates—in the steel industry have not come down. Recently he has been asked in questionnaires from various sources whether wages are to be reduced, and invariably he has referred the authors to that statement he made to the institute early in May. "That still holds good," he says.

Manifestly if it was a good policy when business was on the downgrade it is just as effective when business is beginning to remove its blue glasses. The time and circumstances called for a firm statement by a leader in the steel industry, and while Mr. Farrell was not the only one who made such a declaration, the "big corporation" in this instance acted as a stabilizer.

Statistics Show Trend

Weekly wage earnings have been so reduced by part-time operations that the question often is asked whether rates actually have been maintained—if the steel industry has kept faith. The best evidence on the subject is the bureau of labor's monthly statistics showing wage changes in manufacturing industries. More than 200 iron and steel manufacturing plants and mills report their figures for composite compilation by the bureau. The number employed in these plants and mills in June was 270,000, hence the wage data are accepted as fairly complete.

In the month ending Jan. 15 only one plant reported a reduction in wage rates, amounting to 2.5 per cent, and affecting 42 employes. In the following month none reported a change in rates. For the month ending with March 15 four plants reported a reduction, averaging 2.3 per cent, and affecting 492 employes. In the month ending April 15 one plant reduced rates 2.5 per cent for ninety-three employes. In the month ending May 15 three reported a cut averaging 2.2 per cent for 494 employes, and in the month ending June 15 six reduced rates an average of 4.5 per cent, affecting 1600 employes. In all, the number of wages earners whose rates have been reduced is 2679, less than 1 per cent of the number employed.

Sixty-three establishments in 16 industries reported wage rate decreases in the month ending June 15. The decreases averaged 9.4 per cent and affected 10,784 employes, or 74 per cent of the employes in those plants where the reductions were made. Nineteen of the reductions were in sawmills, and affected 4108 employes. Of the 1108 foundries and machine shops reporting only two had rate reductions, applying to 93 workers.

Part-time operations have been the major cause of reduced earnings. Only 1 per cent of 1775 plants making iron and steel, and iron and steel products of various kinds, were idle in June. Of those which operated 47 per cent were running full time and 52 per cent part time. Only 22 per cent of the total number operating, however, had full normal forces.

Alexander and Edgerton Outline Labor Policy

A sound labor policy knows no geographical differences, it will be the same in the South, North, East and West, Magnus W. Alexander, president, National Industrial Conference board, told the Institute of Public Affairs, University of Virginia. He was one of the speakers in a symposium last week on the subject of "A Labor Policy for the South."

Because of its recent rapid growth southern industry may well profit from the experiences of industry in other parts of the country, and Mr. Alexander told what these experiences have been.

"Throughout American industry," he said, "there now is a greatly increased interest on the part of employers in the well-being of their employes. This social viewpoint is contributing largely to the improvement in conditions under which wage earners work, as well as to a better understanding of the complex problems arising out of the employment relationship." He held these objectives to be fundamental for a sound labor policy:

Just and adequate remuneration; establishment of safe, sanitary and otherwise attractive conditions; maintenance of satisfactory employer-employe relations, and rendering of loyal and efficient service by the employe.

James E. Edgerton, president, National Association of Manufacturers, laid down three basic principles without which, he maintained no industrial success could be achieved: The open shop; unabridged freedom of contract and complete individual liberty within the law.

Pays Half of Old-Age Insurance for Employes

A thrift plan to provide an income for employes after they have retired has been put in effect by Horace T. Potts & Co., Philadelphia, jobbers of iron and steel products. The plan provides "income units," each of which will pay the holder an income of $10 a month from maturity as long as he or she lives. Maturity for men will be at the age of 65, and for women at 60. The company will pay half of the cost of such units up to five for any one person. Insurance will be in the Sun Life Assurance Co. of Canada.

The company has laid aside a special sum of money to be used in

MANUFACTURERS ENTERTAIN BY AIRPLANE

An acronautical "field day" for representatives of the Pioneer Instrument Co., a division of the Bendix Aviation Corp., and the Newton Die Casting Corp., New Haven, Conn., was held recently at the Stratford, Conn., airport. More than a dozen officials of both companies were taken on flights over nearby cities in the Bendix corporation's new Stinson Junior monoplane. The party was arranged as a courtesy return by the Pioneer company for rapid delivery of dies by the Newton company, enabling Pioneer to fill a large contract for army aviation compasses.

special cases where men and women on account of their present age are unable to take advantage of the plan.

Average of Wage Earners Reduced at Steelworks

The average number of wage earners per establishment in the steelworks and rolling mill industry has diminished in recent years, according to a study of census reports by the National Industrial Conference board. The average number of blast furnaces has shown a slight increase. Using 1914 as the base, the index numbers are as follows:

	Steel works and rolling mills	Blast furnaces
1869	.....	38.8
1879	37.8	66.7
1889	57.0	60.1
1899	70.8	96.2
1904	85.9	101.1
1909	92.4	101.1
1914	100.0	100.0
1919	128.9	116.9
1921	82.0	76.5
1923	136.4	118.6
1925	134.7	130.6
1927	127.7	131.7

The actual number of employes, averaged per establishment, is not given in detail, but for iron and steel and their products as a whole the number in 1927 was 132.

Begins New Attack Against Russian Manganese Ore on Dumping Charge

SECRETARY of the Treasury Mellon was petitioned Aug. 12 by the American Manganese Producers' association "to suspend the liquidation" of entries of manganese ore exported from Russia to the United States pending a treasury probe.

In a letter from J. Carson Adkerson, president of the association, Secretary Mellon is asked for the suspension during which time treasury agents should investigate the increment of additional duty properly chargeable against imports of manganese ore "by virtue of the fact such ore is freely offered and sold in the United States at less than its fair market value and at less than the indicated cost of production in Russia."

Relief is requested under provisions of the "antidumping" act of 1921, the letter declaring "it is common knowledge" that the soviet government has determined to sell manganese ore in foreign markets as a means of creating gold credits, regardless of cost.

The association holds that this policy is clearly described in two memoranda, both dated Aug. 5, 1929, prepared by E. C. Ropers, chief of the Russian section, division of regional information, department of commerce. The memoranda are quoted in the letter to Mr. Mellon, with certain translations from the German press pertaining to Russian methods of marketing manganese ore.

Another center of Russian opposition has developed in France, which is aroused over charges that the soviet government is selling its products in France below cost and thus threatens French industries.

An explanation of the Russian manganese situation has been made by A. V. Mikadze, representative of the Soviet Manganexport Corp. in the United States. He states the United States Steel Corp. and Bethlehem Steel Corp., which have been using Chiaturi manganese since 1886, are Russia's best customers. The total of Russian shipments to the United States in the year ended Sept. 30, 1929, was 338,500 metric tons, and in the following nine months 210,000 tons.

The 7600 workers in the Chiaturi mines average $43 a month, with some receiving $3.50 to $4 per day, it is claimed. Workers receive free medical service, unemployment and old age insurance, and living quarters free or nominal, with supplies available at government co-operative stores.

Soviet Government Buys Five More Hydroelectric Generators

FIVE more of the world's largest hydroelectric generators are to be added by the Union of Socialist Soviet Republics to the four already under construction in America for the Dnieper River development at Kichkas, near Zaporozhe, in the Ukraine. The first four generators are being built by the Schenectady works of the General Electric Co., and the fifth will also be entirely constructed there. The remaining four will be manufactured jointly at Schenectady and in the U.S.S.R., with assembly of the units over there.

The generators, rated at 77,500 kilovolt-amperes each, are the largest waterwheel-driven generators of any type ever built; the next largest, those at Niagara Falls, are rated 65,000 kilovolt-amperes each. The Dnieper River units will supply power to Dnepropetrovsk and the southern part of the U.S.S.R.

At the same time the Schenectady works of the General Electric Co., is constructing the generators, the Pittsfield, Mass., works is building twenty-one 26,000 kilovolt-ampere transformers, and the Philadelphia works the switchgear equipment for six units.

The first generator is scheduled for shipment next April. The total weight of each will be approximately 1,760,000 pounds, the weight of the rotor and shaft will approach 980,000 pounds. Maximum diameter will be 42 feet and overall height 40 feet 5 inches, with 17½ feet extending above the floor line. Welded construction is being used. The stator is being made in six sections, with the punchings and windings assembled in each section before shipment; and the rotor is also being dismantled in preparation for transportation.

Negotiations for both the original four generators and the added five were completed with the International General Electric Co., by the Amtorg Trading Corp., New York. The nine water turbines, to operate under a head of 123 feet, are being supplied by the Newport News Shipbuilding & Dry Dock Co., Newport News, Va. Hugh L. Cooper & Co., New York, are the consulting engineers on the construction of the dam and power station.

More Engineers to Russia

Cleveland—Arthur G. McKee & Co., Cleveland, supervising the construction of a $200,000,000 steelworks and mines development at Magnitostroy, Russia, has dispatched the second field party of engineers and contractors to Magnitostroy. Eventually the McKee company expects to have 80 engineers on the job. The project includes eight 1000-ton blast furnaces, 360 coke ovens and 14 open-hearth steel furnaces.

Books Tractors, Combines

Oliver Farm Equipment Co., South Bend, Ind., has received a substantial order for tractors and combines from the Amtorg Trading Corp., New York, for use on the state farms in Russia. Shipments will be made over a period of from November to April. The size of the order is not revealed. This is the third large tractor order placed in the Chicago area.

July Ingot Rate Falls 18 Per Cent; Lowest in 6 Years

STEEL ingot production in July declined more precipitately than in any month this year. It fell 18 per cent from June, dipped below even last December, and was the lowest for any month since September, 1924.

July's daily rate of 112,823 gross tons, according to the American Iron and Steel institute, compared with 137,610 tons in June and 186,561 tons in July, 1929, when the slide which did not stop until January, this year, began.

July's total of 2,933,399 gross tons of ingots contrasts with 3,440,239 tons in June and 4,850,583 tons last July.

For seven months, ingot production in 1930 has totaled 26,726,598 tons, compared with the record 33,886,857 tons in the first seven months of 1929. In 1928, with which 1930 is generally compared, ingot production for seven months was 28,603,871 tons.

Last year, which set an alltime record, output of open hearth and bessemer ingots was 54,312,279 tons. On the basis of the year to date, 1930 will be a 46,000,000-ton year.

Steelworks in July averaged operations of only 56.35 per cent; last July they were at 95.13 per cent. For 1930 to date the average of steelmaking operations has been 73.75 per cent; a year ago 95.47 per cent.

Only open-hearth and bessemer statistics are included.

Statistics on July Pig Iron Production Are Revised

A revision of statistics on pig iron production for July shows the daily rate for that month to have been 85,110 gross tons instead of 81,574 tons, as given on page 28 of STEEL for Aug. 7.

The daily average for the first seven months of 1930 thus is 98,788 tons.

The revised July total is 2,638,441 gross tons, making the seven-month total for 1930 20,943,055 tons, against 25,420,048 tons a year ago.

The revised rate of operations for July is 60.3 per cent.

The number of active blast furnaces as of July 31 is unchanged at 144.

Week's Coal Output Off

Week of Aug. 2 witnessed production of bituminous coal fall to 7,957,000 net tons from 8,084,000 tons for the week previous, and comparable to 9,349,000 tons for the week ended Aug. 2 of 1929.

Ship Fewer Locomotives

Shipments of railroad locomotives in July dropped back below the May total, after a substantial increase in June. Total shipments for six months are 22 per cent greater than in first half of 1929. Department of commerce figures follow:

	Shipments		Unfilled Orders	
1929	Domestic	Foreign	Domestic	Foreign
July	42	27	508	31
(7 mos.)	322	66	.....	.....
Aug.	123	6	405	31
Sept.	67	8	402	27
Oct.	96	.....	396	27
Nov.	75	20	389	9
Dec.	63	4	483	7
(year)	746	104	.....	.....
1930				
Jan.	48	.....	577	10
Feb.	64	3	525	8
March	66	2	529	6
April	94	3	461	3
May	56	2	410	9
June	80	1	335	8
July	55	1	284	7
(7 mos.)	463	12	.....	.....

Galvanized Ware Is Lower in All Classes

June production of all classes of galvanized sheet metal ware was lower than May's totals, Pails' and tubs' output fell 20 per cent below the May figure, by department of commerce tabulations:

(In dozens)

1929	Pails and Tubs Production	Pails and Tubs Shipments	Other Ware Production
June	98,857	104,762	37,479
(6 mos.)	954,011	975,059	287,802
July	105,454	109,841	42,384
Aug.	107,004	108,461	53,250
Sept.	113,698	120,297	46,594
Oct.	129,282	135,197	45,117
Nov.	102,400	90,684	32,951
Dec.	112,962	107,733	33,114
Total year	1,624,811	1,647,272	541,212
1930			
Jan.	145,588	154,731	33,982
Feb.	119,739	129,853	35,121
March	135,178	135,602	37,963
April	131,015	120,552	44,058
May*	113,645	107,496	44,405
June	89,932	82,956	40,646
(6 mos.)	735,097	731,190	236,175

*Revised.

Low for Enameled Ware

Enameled sheet metal ware shipments in June fell to 247,861 dozen from reports made by 80 per cent of the industry. This represents a 15

(*Concluded on Page* 30)

Steel Ingot Production—1929-30

94.27 Per Cent of Industry Reporting
Gross Tons

1929	Open-hearth	Bessemer	Monthly output companies reporting	Calculated monthly output all companies	Number of working days	Approximate daily output all companies	Per cent of operation
Jan.	3,692,062	549,616	4,241,678	4,500,209	27	166,674	84.99
Feb.	3,590,826	489,279	4,080,105	4,328,789	24	180,366	91.97
Mar.	4,180,408	596,691	4,777,099	5,068,265	26	194,933	99.40
Apr.	4,025,409	640,351	4,665,760	4,950,139	26	190,390	97.08
May	4,275,161	707,484	4,982,645	5,286,339	27	195,790	99.84
June	3,999,363	622,585	4,621,948	4,903,657	25	196,146	100.02
July	3,922,053	649,950	4,572,003	4,850,668	26	186,564	95.13
7 mos.	27,685,282	4,255,375	31,940,657	33,886,857	181	187,220	95.47
Aug.	3,987,400	668,023	4,655,423	4,939,172	27	182,932	93.28
Sept.	3,624,954	642,886	4,267,840	4,527,966	25	181,119	92.35
Oct.	3,631,674	642,235	4,273,909	4,534,405	27	167,941	85.64
Nov.	2,796,214	522,672	3,318,886	3,521,173	26	135,430	69.06
Dec.	2,375,797	360,489	2,736,286	2,903,063	25	116,123	59.21
Total	44,101,321	7,092,261	51,193,582	54,313,845	311	174,643	89.05
1930							
Jan.	3,137,002	441,572	3,578,574	3,796,090	27	140,596	70.22
Feb.	3,336,021	508,618	3,844,639	4,078,327	24	169,930	84.88
Mar.	3,513,904	539,616	4,053,520	4,299,905	26	165,381	82.60
Apr.	3,406,610	509,234	3,915,844	4,153,860	26	159,764	79.80
May	3,265,190	528,968	3,794,158	4,024,778	27	149,066	74.45
June	2,835,527	407,586	3,243,113	3,440,239	25	137,610	68.73
July	2,411,592	353,723	2,765,315	2,933,399	26	112,823	56.35
7 mos.	21,905,846	3,289,317	25,195,163	26,726,598	181	147,661	73.75

Figures exclude crucible and electric ingots. Operating percentages for 1929 are based on capacity of 60,990,810 gross tons as of Dec. 31, 1928; for 1930 on capacity of 62,265,670 tons as of Dec. 31, 1929.

Industrial Men in the Day's News

C. R. Messinger, Chairman of Sivyer Steel Casting Co., Milwaukee

LONG experience in production and marketing of steel castings and other steel products has led him to value trade association and technical society results.

IN twenty years he has moved to the top in his companies and has held important positions in other lines of activity.

FAMILIARITY with export trade has been gained through establishment of direct representation for his companies in Europe.

ACTIVE in the promotion of consumption of castings and steel products, C. R. Messinger, chairman of the board of directors of the Sivyer Steel Casting Co., Milwaukee, has been a leader in trade association and technical society work for a number of years. Mr. Messinger, associated with the Sivyer company since 1909, formerly was president of the company. He was elected chairman of the board following the absorption of the Nugent Steel Castings Co., Chicago, last February, as noted in *Iron Trade Review* of Feb. 20.

Mr. Messinger is a past president of the American Foundrymen's association, serving in 1922, and has been active in the Milwaukee Metal Trades association, Electric Steel Founders' Research group, and the American Malleable Casting association, which is now the Malleable Iron Research association. He was graduated from Sheffield Scientific school of Yale university in 1906. After graduation he represented the Harbison-Walker Refractories Co., Pittsburgh, in that city and in Chicago for about three years.

In 1909 Mr. Messinger was appointed general manager of the Sivyer Steel Casting Co., and later became vice president. In 1916 he was appointed secretary of the Federal Malleable Co., also of Milwaukee. He was made vice president and general manager of the Chain Belt Co., Milwaukee, in 1917.

Mr. Messinger has familiarized himself with export trade. In 1919 he went to Europe to establish direct export connections for the companies with which he was associated. Mr. Messinger's business activities are many and varied. He is active also in civic work. For some years he has been a director and officer of several banks and has served as director in several other companies.

A F. MURPHEY has been appointed works manager of the Zanesville, O., division of American Rolling Mill Co., Middletown, O., a newly created works unit to be operated with three other manufacturing divisions at Ashland, Ky., Middletown, and Butler, Pa. Mr. Murphey has been with the company since 1906, was superintendent of the Zanesville plant in 1910 and plant manager since 1922.

L. F. Reinartz, assistant general superintendent since 1923, has been appointed works manager of the Middletown division. Mr. Reinartz joined the company in 1909 as a chemist in the open-hearth department and has served in various capacities there.

G. D. Tranter, open-hearth superintendent, Middletown division, has filled the newly created position of general superintendent of the same works. The appointment of E. E. Graeff assistant general superintendent at Middletown was also announced recently.

□ □ □

Howard C. McNeil, vice president, Illinois Iron & Bolt Co., Carpentersville, Ill., has been elected president to succeed John F. Fierke, who has been president and general manager of the corporation continuously for the past 32 years and who is now elected to chairman of the board.

H. A. Rice was elected vice president, succeeding Mr. McNeil.

□ □ □

H. J. Kelly, general manager of the Dominion Steel & Coal Corp., Sydney, N. S., has been elected a director and vice president of the company, continuing in his former capacity. Mr. Kelly has been in the steel buisness about 39 years, 30 of which he was assistant general superintendent for Bethlehem Steel Corp. at Buffalo.

C. B. Lang becomes vice president in charge of sales. Other appointments include C. S. Cameron, a director, now vice president; Joseph A. Kilpatrick elected to the board of directors.

□ □ □

H. S. Bartholomew, formerly with Cooley & Marvin, cost engineers, Boston, has been appointed directing head in a consulting capacity of the

newly created cost engineering department of the Steel Founders' Society of America and will have offices in the quarters of the society, Graybar building, New York.

□ □ □

J. H. Van Campen has been appointed chief engineer of both the Youngstown and Warren districts of Republic Steel Corp., Youngstown, O.

□ □ □

Walter Kneeland has joined the roll sales department of Wheeling Mold & Foundry Co., Wheeling, W. Va. Mr. Kneeland was formerly with United Engineering & Foundry Co., and Youngstown Foundry & Machine Co.

□ □ □

B. Charles Warthen has been made purchasing agent for Beaumont Iron Works, Beaumont, Tex. E. J. Roach, formerly superintendent of shop, has been appointed plant manager.

□ □ □

E. B. Terryberry has resigned as manager of the Woodstock, Ont., branch of Massey-Harris Co., farm implement manufacturer, and will retire Sept. 1 after 40 years' service.

□ □ □

F. J. Condit, formerly with the general offices, Hevi Duty Electric Co., Milwaukee, has been appointed resident engineer for the company, with offices at Buffalo.

□ □ □

Fred T. Whiting, industrial manager, Chicago division, Westinghouse Electric & Mfg. Co., has been appointed assistant manager of the northwest district under N. G. Symonds, commercial vice president.

□ □ □

J. B. Jackson, recently director of the general staff and director of the research laboratories of General Motors Corp., has been made general manager of the Jaxon Steel Products Co., division of General Motors, at Jackson, Mich.

□ □ □

Charles C. Phelps, 11 Park place, New York, has been appointed sales agent for the New York district by the Leavitt Machine Co., Otange, Mass., to handle valve reseating machinery for globe, gate and pump valves.

□ □ □

E. E. Wild, formerly general manager of Columbian Steel Tank Co., Kansas City, Mo., until he resigned a few months ago, has returned to the company as sales promotion manager with headquarters in Kansas City.

□ □ □

L. L. Warriner, for the past four years manager of plants of Fairbanks, Morse & Co., Chicago, has resigned and on Jan. 1 will become vice-president and a director of the Master Electric Co., Dayton, O. He also will be in general charge of manufacturing. Mr. Warriner joined the Fairbanks-Morse organization at the main works in Beloit, Wis., in 1917.

□ □ □

Victor W. Peterson has been elected president and general manager of the Shafer Bearing Corp., Chicago, maunfacturer of self-aligning roller bearings. Mr. Peterson also is president of the Hannifin Mfg. Co. and the Sherman-Manson Mfg. Co., both of Chicago.

□ □ □

Sidney J. Cook has been elected vice president of Egan, Webster & Co. Inc., Pittsburgh, refractory producer. Mr. Cook had been associated with the purchasing department of the Youngstown Sheet & Tube Co., Youngstown, O., for the past 20 years.

Everett Chapman

Mr. Chapman, as noted in STEEL, Aug. 7, has been appointed director of research and development, Lukenweld Inc., division of Lukens Steel Co., Coatesville, Pa.

□ □ □

A. R. Smith has been appointed executive engineer, turbine engineering department of General Electric Co., succeeding the late William J. Dalles. Mr. Smith has been with General Electric since 1897 and will retain his responsibility as engineer of the construction engineering department.

□ □ □

R. H. Pratt has been appointed assistant general manager of the American Steel & Wire Co., 30 Church street, New York, succeeding Richard Foster. Mr. Pratt has been associated with the company about 30 years and previously was in charge of the flat wire and spring department.

□ □ □

Fred Griffiths has resigned as manager of roll sales, Mackintosh, Hemphill Co., Pittsburgh, to assume the position left vacant by H. A. Lomax in the Duquesne Steel Foundry Co., Pittsburgh. Mr. Griffiths has been identified for a number of years with Mackintosh, Hemphill Co. in both production and sales activities and was formerly with A. Garrison Foundry Co., now a Mackintosh, Hemphill Co. subsidiary.

□ □ □

I. W. Turner, formerly with the New York sales office, Ingersoll-Rand Co., has been appointed to the New York sales office of the Pittsburgh Valve, Foundry & Construction Co., of which R. B. Felker is manager.

□ □ □

Ray C. Crouch has been transferred from position of works manager, Birmingham, Ala., plant of A. G. Reeves Steel Construction Co., to act as manager of the Alliance, O., plant of the company.

□ □ □

James L. Williams has been appointed general manager of sales, Taylor-Wilson Mfg. Co., Pittsburgh, maker of seamless and welded pipe and tube mill equipment. Mr. Williams, following graduation from Carnegie Institute of Technology in 1911, was with National Tube Co., Standard Seamless Tube Co., and Pittsburgh Seamless Tube Co. Mr. Williams' other affiliations in business have been with Standard Engineering Co., A. Garrison Foundry Co. and Pittsburgh Iron & Steel Foundries, and he takes to his new office 20 years of engineering and sales experience on tube and pipe mills.

Steel Earnings Continue To Fall Below 1929

Youngstown Sheet & Tube Co., Youngstown, O., reports net income of $2,810,345 after interest, depreciation, federal taxes etc., for the second quarter, equal after preferred dividend requirements to $2.17 a common share. Earnings in the first quarter were $2,516,706, or $1.92 a common share. Net income for the first half was $5,327,051 or $4.09 a share, against $10,537,373 or $10.12 a share one year ago.

American Rolling Mill Co., Middletown, O., reports net profit for the first half year of $1,646,051, equal to 96 cents a common share, compared with $4,410,176 equal to $3.26 a common share in the first half of 1929. For the first half of 1928 profits were $1,767,002 or $1.55 a share.

Electric Controller & Mfg. Co., Cleveland, for the first half reports net profit of $342,914, equal to $4.83 a common share, compared with earnings amounting to $5.04 a share in the first half of 1929 and $2.60 in 1928.

Allis-Chalmers Mfg. Co., Milwau-

kee, reports unfilled orders July 31 were $16,674,000, compared with $17,926,000 at the end of June, and with $14,896,719 at the end of July, 1929.

American Steel Foundries, Chicago, for the six months ended June 30 had a net profit of $2,139,538 after depreciation and federal taxes, against $2,802,224 net in the first half of 1929. The June quarter net profit was $1,120,078, against $1,591,208 in 1929.

Low Set in Enameled Ware

(*Concluded from Page 27*)

per cent decline from the previous low for the year, set in May. Half-year totals, by department of commerce fall behind 1929 in comparison:

In Dozens

1929	Total	White	Grey and Colored
June	337,375	147,285	190,090
(6 mos.)	2,421,710	1,059,820	1,361,890
July	290,532	127,058	163,474
August	385,162	153,969	231,191
Sept.	338,169	143,505	194,664
October	371,292	158,138	213,154
Nov.	305,714	115,117	190,597
Dec.	391,523	103,404	288,119
Total (year)	4,504,102	1,861,011	2,653,091
1930			
Jan.	332,146	110,758	221,388
Feb.	331,915	120,523	211,392
March	341,372	124,856	216,516
April	318,431	124,562	193,869
May	290,617	114,709	175,908
June	247,861	90,151	157,710
(16 mo.)	1,862,342	685,559	1,176,783

Steel Bookings Turn Upward

For the first time since March, unfilled bookings of the United States Steel Corp., as of July 31, have increased, totaling 4,022,055 tons. The gain was 53,991 tons or 1.36 per cent. Further comparisons follow:

Date	Total	Change, tonnage	Change, per cent
1929			
Jan. 31	4,109,487	132,775+	3.34+
Feb. 28	4,144,341	34,854+	0.84+
Mar. 31	4,410,718	266,377+	5.70+
April 30	4,427,763	17,045+	0.38+
May 31	4,304,167	123,596—	2.88—
June 30	4,256,910	47,257—	1.10—
July 31	4,088,177	168,733—	3.90—
Aug. 31	3,658,211	429,966—	10.50—
Sept. 30	3,902,581	244,370+	6.68+
Oct. 31	4,086,562	183,981+	4.71+
Nov. 30	4,125,345	38,783+	0.95+
Dec. 31	4,417,193	291,848+	7.74+
1930			
Jan. 31	4,468,710	51,517+	1.20+
Feb. 28	4,479,748	11,038+	0.25+
Mar. 31	4,570,653	90,905+	2.03+
April 30	4,354,220	216,433—	4.73—
May 31	4,059,227	294,993—	6.78—
June 30	3,968,064	91,163—	2.24—
July 31	4,022,055	53,991+	1.36+

Obituaries

JAMES C. DAVIS, advisory operating vice president, American Steel Foundries, Chicago, died Aug. 10. Mr. Davis was prominent in foundry circles and was identified as operating superintendent with Sargent Co., Chicago, for a number of years, and also with Leighton & Howard Steel Co., St. Louis, in the same capacity. He remained with the latter company until it was absorbed by American Steel Foundries in 1902, becoming western district manager at that time. In 1905 he was made assistant to the first vice president, followed by election to the fourth vice presidency and then advisory operating vice president, which position he held until the time of his death.

James C. Davis

□ □ □

Frank Kinsey, 82, president American Key Can Co., Chicago, and inventor of the key can opener, died recently at Chicago.

□ □ □

Albert H. Shaneberger, 63, vice president of W. J. Holliday & Co., Indianapolis, jobber of iron and steel, died recently.

□ □ □

Martin J. Yocum, from 1900 to 1921 secretary of the Harnischfeger Corp., Milwaukee, died Aug. 1. He was 68 and had not been active in business since his retirement from the Harnischfeger Corp.

□ □ □

W. J. Sullivan Jr., 24, son of W. J. Sullivan, secretary to James A. Farrell, president of the United States Steel Corp., New York, died at the home of his father, Freeport, L. I., Aug. 8, following a prolonged illness. He had formerly been connected with a New York brokerage company.

□ □ □

Dorr E. Felt, 68, president Felt & Tarrant Mfg. Co., Chicago, and inventor of the comptometer, died Aug. 8. In 1918 Mr. Felt was a regional advisor of the war industries board and was a member of the employers' commission appointed by Secretary of Labor Wilson in 1919. In addition to his industrial affiliations beginning with a machinist's apprentice at 14, he later became a writer on labor and industrial subjects.

□ □ □

Myron C. Wick Jr., 38, one of the opponents of the Youngstown Sheet & Tube-Bethlehem Steel Co. merger and in whose name the suit to enjoin the merger was filed, died Aug. 8. He was a member of one of the pioneer families of the Mahoning valley engaged in the iron and steel industry and his father was an authority on the manufacture of steel tubes. Mr. Wick was a joint plaintiff in the merger case with International Shares Corp.

Production Index Lower

Washington—June production index number for iron and steel was 110, compared with 111 for May and 155 for June last year. The average for 1923-1925 is taken as 100 by the department of commerce. The June index for nonferrous metals was 98, compared with 101 for May and 126 for June of last year. The index for iron and steel unfilled orders for June was 128, compared with 136 for May and 78 for June last year.

Pipe Forming Mill Employs Rolls of Cast Steel

In the article appearing on Page 54 of this issue of STEEL describing a new mill designed by the Yoder Co., Cleveland, for forming 26-inch electric welded pipe, a misstatement was made in connection with the roll arrangement and roll material. The first two sentences in the second paragraph in the center column should read as follows: "Of the 12 stands, the first five are provided with horizontal rolls only, while the last seven stands have both horizontal and vertical stands as well as intermediate rolls. All rolls are of cast steel, hardened and ground."

Here and There in Industry

TAYLOR INSTRUMENT COMPANIES OF CANADA LTD., Toronto, has been incorporat- with $1,000,000 capital and has taken over the business of the Taylor Instrument Companies, Rochester, N. Y., manufacturer of temperature, pressure and meteorological instruments. Offices will remain in the Tycos building, Toronto, with A. H. Allen manager, H. W. Payne in charge of manufacturing and H. R. Smith secretary.

□ □ □

Moline Iron Works, Moline, Ill., has elected L. E. Nutt president, B. V. Nutt vice president, M. C. Nutt vice president and secretary and J. T. Miles treasurer. Directors elected are William Butterworth, Sol Hirsch, J. T. Miles, Ed Miles, L. E. Nutt, B. V. Nutt, M. C. Nutt, C. R. Rosborough and James F. Walsh.

□ □ □

Steel Corp. of Canada, Windsor, Ont., has started production in its new galvanizing plant. One unit is in operation, with capacity of 50 tons per day of 54-inch sheet and a similar unit will be started shortly. A third unit to handle 34 tons per day will be installed immediately.

□ □ □

Congdon & Carpenter Co., Providence, R. I., dealer in metals and metal products, has completed a warehouse at 405 Promenade street and will entertain at a formal opening the afternoon of Aug. 14.

□ □ □

Columbia Engineering and Steel Treating Corp., 4504 Fillmore street, Chicago, in receivership, has been ordered sold by the court. Bids have been asked on the tangible assets, tools, dies, fixtures, jigs, punch presses and special machinery, to close Aug. 15, by C. A. Willoughby, receiver, 137 South LaSalle street, Chicago. If no bid is satisfactory auction sale will follow.

□ □ □

Patriarche & Bell Inc., New York, dealer in special steels, has moved its office and warehouse from 351 West street to 53-57 Carmine street, where a new building gives larger space and more modern facilities for handling its stock.

□ □ □

Mayer & Oswald, 332 South La Salle street, Chicago, direct sales representatives, have been given exclusive distribution in Chicago territory of refractory cements and plastics manufactured by Babcock & Wilcox Co., New York.

□ □ □

Arthur G. McKee & Co., Cleveland, has been given a contract by the Bethlehem Steel Corp., Bethlehem, Pa., for design of two complete stock houses at the No. 5 and No. 6 blast furnaces at the corporation's works at Johnstown, Pa. The contract includes furnishing certain materials and three double-hopper scale cars. The cost of the improvement is estimated at $600,000.

□ □ □

Bart Products Co., Bartlesville, Okla., is now in quantity production in precision work, including scientific instruments, measuring devices and controls also a general line of contract work where a high degree of accuracy is necessary. F. E. Fisher is general manager.

□ □ □

Reda Pump Co., Bartlesville, Okla., is successor to Bart Mfg. Co. of that city. It manufactures electrical centrifugal pumps for oil field service. C. C. Brown is president and S. N. Van Wert is general manager.

□ □ □

USL Battery Corp., Niagara Falls, N. Y., has appointed William Bastable its distributor for its welding equipment in the Manhattan district, and an office has been established at 505 Fifth avenue. He has been engaged in the sale of electric arc welding equipment for several years, in addition to handling sales and service for the Wilson Welder & Metals Co.

□ □ □

State Line Generating Co., Chicago, has started work on the second section of its power station at Hammond, Ind. Generating units 2 and 3, aggregating 257,000 kilowatts capacity, approximately 342,000 horsepower at 85 per cent power factor, will be installed in the second section, bringing the total station capacity to 465,000 kilowatts, about 620,000 horsepower. Unit No. 2 is being built by General Electric Co., Schenectady, N. Y., and Unit No. 3 by Allis-Chalmers Mfg. Co., Milwaukee.

□ □ □

Shafer Bearing Corp., 6501 West Grand avenue, Chicago, is extending its facilities by enlarging its research laboratory and engineering department. Additional equipment and testing devices for railroad and industrial bearings will be installed. Present production of roller bearings will be extended. Bearing sizes and types of mountings for industrial applications will be added for a wider range of machine and shop installations.

□ □ □

Wisconsin Radiator Furniture Co., Mayville, Wis., manufacturing ornamental metal grilles and other perforated and punched metal specialties, has completed additions increasing the working floor space to 24,000 square feet. The metal department is now housed in two work rooms, 48 x 175 feet and 40 x 80 feet; the paint and enamel shop is 60 x 97 feet, and the warehouse and shipping room, 60 x 80 feet.

□ □ □

Bump Mfg. Co., LaCrosse, Wis., a new $200,000 corporation formed to take over and develop the business of the Bump Paper Fastener Co., 1830 West avenue south, will engage in the manufacture of a patented pump designed by George P. Bump, as well as continue the production of the clipless paper fastener made for many years. W. J. Ferris becomes president of the new corporation, Myron D. Savage, vice-president and general manager, Q. H. Hale secretary, Edwin Erickson treasurer, and Earl Olson works manager.

□ □ □

Barrett-Cravens Co., manufacturer of lift trucks, platforms and portable elevators, will move into its new and modern plant at 101 West Eighty-seventh street, Chicago, Sept. 1. This places the company under the same roof with its affiliated companies, the Walker Vehicle Co., manufacturer of electric street trucks, and Automatic Transportation Co., manufacturer of electric lift trucks and tractors.

□ □ □

Simonds Saw & Steel Co., Fitchburg, Mass., is to build a plant said to be the largest in the world devoted to production of saws. A site has been bought on the line of the Boston & Maine railroad in Fitchburg and former shops of that railroad will be torn down to make room for the new plant, which will have about four and a half acres of floor space. The plant is expected to be ready about June 1, 1931. The Simonds plant at Fitchburg and the works of its file plant, also in Fitchburg, will be united in the new plant. The present Simonds plant in the center of the city, will be occupied by another industrial user as soon as vacated.

□ □ □

Wheeling Metal & Mfg. Co. and Lead Clad Wire Co., both of Wheeling, W. Va., have voted to merge their interests under the name of the former. Their plants are adjoining and their products are similar, the merger being to afford more economical administration.

MIRRORS of MOTORDOM

PREDICTIONS of improvement in the automotive situation are becoming almost as trite as the weatherman's forecast of rain.

By all logic, production of passenger cars and trucks should show mild betterment over July. To the extent that those manufacturers who were down the last half of July have resumed operations this is true, but on the surface it is difficult to gage the improvement and production is scarcely higher than in the first half of July.

Ford, Packard, Graham, Oakland-Pontiac, General Motors Truck—in fact, practically all the more important manufacturers except Hupp, Olds and White—were back in production last week. Leading parts makers such as Midland, Motor Products, Timken-Detroit Axle and Alloy Steel Spring & Axle, are again operating.

But the expected inflow of steel requirements has not materialized. The margin on which automobiles are being assembled has never been narrower. Scarcely ten to fifteen days' supply of steel is available in all Detroit, save for the warehouses. It would seem imperative that material requirements expand, but this expectation has not been fulfilled.

Makers Feel Way Cautiously and Effect of Heat Looms

More than at any time this season, the automotive industry is cautious. In contrast to 1921, stocks of both raw materials and automobiles and trucks are low, but none seems of a mind to produce faster than cars move off dealers' floors.

For one thing, the drought which is parching most of the United States east of the Rockies is a dampener. It is estimated that 57 per cent of all registrations is in farm areas or in cities of 10,000 and under. A large proportion of Ford and Chevrolet output, comprising 70 per cent of the entire industry's, is absorbed in agricultural areas.

If August develops a 15 per cent increase over the estimate of 200,000 to 225,000 cars assembled in July it will do well. Buick's run on its new eights, the Chevrolet cleanup to conclude the 1930 model by the end of August, and Ford are the main supports of the market.

Buick Re-Enters Production Picture with New Eights

Buick with its 1931 models is a bright spot in the field. Its new straight eights are being well received and current opinion is that the new models will take. The plant at Flint is assembling about 800 to 900 units daily and tentative production for August is lined up for about 20,000 units. Body releases from the Fisher plant in Detroit alone are at about 500 units daily.

Production in part will be taken up with stocking dealers, but present schedules contrast sharply with Buick's working days and almost complete shutdown earlier in the summer, although the management did not officially declare a vacation. The four series of the new eights are in varying wheelbases from 114-inch to 132-inch and bodies, while not materially changed to outward appearance are a better constructed job this year. Some of the models appear more substantial, not unlike a small Cadillac.

◆

Ford, working 16 days in August, will be on a 4-day week schedule which began with the resumption of work on Aug. 4, after a 3-week shutdown. Judging from the first week's output in August at 7000 daily, about 112,000 cars will be turned out of assembly lines during the month. Stocks in many materials are low at the plant; before closing July 11 purchasing was made for only a little less than two weeks ahead.

Plant personnel has been largely re-engaged with the exception of a reported reduction of about 7500 men before reopening. Ford's Walkerville, Ont., plant continues at a 3-day week pace, 300 units daily.

Changes rumored in Model A confine themselves to minor adjustments in manufacture and no radical departure from the present model style is contemplated now. Changes as noted previously will, in all probability, be effected and the present car will be manufactured for some time, it is confidently expressed. Rumors run rampant that Ford will add to his present choice of models.

Chevrolet Prepares Early Arrival of 1931 Model

Chevrolet is secretive but its inventories, like those of other manufacturers, are low and this is taken to indicate that the run of the 1930 model will be concluded earlier than usual. It is believed that the end of August will mark the end of the present model and instead of waiting until the January shows, the 1931 job will be offered in November.

Its management's clever manipulation in closing one department down while the next one is in full swing is evening out production curves. Though actual output in the plant of the new car will not be under way for about a month, some tonnages are already being specified for the new model. As early as late in July several parts makers were tooling up and turning out some of the new job's parts.

General Motors, it is believed, will try to endow the Chevrolet with more individuality. Just as the word "Ford" has become a world-wide synonym for a certain class of au-

tomobile, so General Motors will attempt to set up Chevrolet as a type, styling it to conjure up a distinct individualistic impression in the public's mind.

◆

Chrysler should be doing well but conflicting reports emanate. Working five days, about 1300 to 1400 units are the weekly total. The new models are being received with mixed comment, though their appearance embodies style in keeping with the times. Like Buick, in part, it is yet early to determine the merit of present production schedules, with output going largely into dealers.

Will Parts Makers Shift Blanking Job on Mills?

Parts makers are experimenting with specifications for blanks instead of strip steel from the mills, turning the blanking operation over to the steel producer. Some controversy exists today on whether the practice will enjoy any popular growth and whether mills as well as the parts makers will be satisfied.

Kelsey Hayes Wheel Co. is reported, along with others in the same general classification, to have tried the practice. Blanking operations have been done at the mills by some Bethlehem units, American Rolling Mill and others.

There is much talk heard of the mills "holding the bag" with large amounts of tonnage tied up in cut-to-specification blanks, awaiting the possibly uncertain release of the parts producer, of the close inspection necessary by the mill, of the expense of installing blanking-operation machinery. Yet large savings in the transportation of scrap are evident if the blank is sent instead of the unpunched sheet or strip.

Whether the practice is to become a general thing is now uncertain and whether the mills are going to enter into a parts manufacturing operation is again in the same category. A certain amount of tonnage has moved under this arrangement to date, and it may be that its inception arises from the mills' striving for business that they will undertake this new service.

◆

Rumors run high on activities in the Cadillac-LaSalle division of General Motors. Within a week new models in both the Cadillac and LaSalle eight will be introduced.

With the announcement that Cadillac will produce a 12-cylinder car, some say that the Cadillac eight will be discontinued all in opposition to expression fully as strong that LaSalle will go by the boards. However, it is a fact that the new Cadillac twelve, on the proving ground last month, will be on the market much sooner than the public believes.

◆

To an observer, some of General Motors' merchandising policies incite wonderment.

Now that Buick is out, the Oakland and Viking divisions are pointed out to be not only in exact contradiction with their greatly expounded V-type eight to the Buick straight eight, but also exist in a competitive price field. Oakland may carry on, despite reports it was to be dropped. The opposite apparently will be Viking's fate, for despite its worth and the expense to which its fairly-recent inauguration and manufacture was put, it seems to be slated for an early orphanage.

◆

Hudson-Essex has picked up some, but its plant resembles a morgue the greater part of the week. A 2-day week schedule is maintained but secrecy is paramount over its actual activities. A new model is as vague as ever, though with the management's reputation of smart merchandisers, a new and better motor in a unit competing with the new Buick would not be a groundless assumption.

Reo, with 600 men back at work and an additional 500 within a week, has been tooled up for some time on an eight. Murray Body has been busy on its work.

Under the present progressive president and management, Reo, when it comes out as expected in September, will be competing with either the 124-inch or 132-inch wheelbase Buick.

Auto Prices, Wages Hold Contrary to Views of Some

Cuts in automobile prices have to come, opinions say in many quarters. It is a source of constant wonderment that greater reductions have not been effected heretofore in the present recession.

Large profit percentages going to merchandising expenses are, in many cases, expressed as needless. Sometime certain classes of cars may be driven away direct from the plant without the dealers' entry into the picture.

No hourly wage cuts are heard. Working time has in most plants been reduced but the wage rate has with few exceptions lately maintained a level keel. This speaks well for wages in resumption of better times. Labor can understand reduced time better than reduced rate. It knows that wages, once cut, lag appreciably behind conditions once improved.

◆

The Saginaw valley, not far from the track of downbound lake freighters, has long visualized itself as a Pittsburgh or a Gary. Some progress is being made, but the ultimate development is, of course, conjecture.

In recent years General Motors has been concentrating considerable foundry work at Saginaw, and the district continues expectant of a General Motors blast furnace plant. Meanwhile, most pig iron required is coming over the new docks, capable of storing 100,000 tons.

Although it is for foundry purposes, steel is now being made in the Saginaw valley. A new 20-ton acid open-hearth furnace has been completed by the Ohio Steel Foundry Co. at its Bay City works.

The appropriation of $500,000 by congress for deepening the Saginaw river and dredging a turning basis is stirring the valley's hopes.

Reveal General Motors' Contradiction on Eights

Last January the Oakland division of General Motors brought out its V-eight engine. A booklet which compared V eights with straight eights, part by part, most unfavorably to the latter, said:

"Every known type of eight-cylinder engine was completely and carefully analyzed by Oakland's engineers during the months which preceded the final selection of this engine. . . . Although for 16 years the General Motors Corp. has been building cars powered with V-eight engines—an experience upon which Oakland has generously drawn—the final choice of the 90-degree V-eight design for the new Oakland, instead of the line eight, was based entirely upon considerations of relative merit.

". . . The selection was based solely upon the results of a careful study of the various designs, and upon the facts learned during tests of 32 different motors on the dynamometer and 48 engines installed in cars and operated an aggregate of 1,000,000 miles at the General Motors proving ground. These studies and tests revealed most convincingly the superiority of 90-degree V-eight design."

Meanwhile, on the same proving ground at Milford, Mich., and presumably with equal facilities and ingenuity, Buick, also a General Motors division, was exploring the eight-cylinder field, only to decide upon the straight or line eight. The smallest Buick is squarely in the Oakland field, the next larger Buick overlaps it. The decisions of Oakland and Buick engineers could have been no more conflicting.

So Detroit is asking, Does a proving ground prove?

EDITORIAL

Include Sound Labor Policy in Building for Future

A GENERAL criticism of the steel industry for not having abolished completely the 12-hour day and seven-day week evidently was not intended by Secretary of Labor Davis in his comments last week. The secretary stated that "too many 12-hour day and seven-day week industries still are to be found in this country." His specific remarks in relation to the steel industry, however, were directed against some companies in the Birmingham, Ala., district. He had the bureau of labor statistics make an investigation there, and, as reported, found a considerable percentage of the wage earners on the long day and week.

An indictment of the entire steel industry on such evidence would be absurd. "The shoe does not fit." Yet the industry is so organized that a reactionary tendency in some of its parts may easily be misconstrued as an evil reflection on all. It is made to appear more reprehensible when labor is plentiful, and moderation is suggested for humane and economic reasons.

President Farrell, of the Steel corporation, recognized this problem when he spoke to the American Iron and Steel institute last May. And previously a committee of institute members was selected to consider it. In February the Federal Council of Churches published the results of a survey made by two divinity students, showing a percentage of steelworkers engaged 12 hours a day and seven days a week. Mr. Farrell made a courageous answer.

"The companies or individuals," he said to the institute, "that operate plants wholly or partly 12 hours a day and wholly or partly seven days a week ought to be made known."

Farrell Recognizes «Derelictions»

Referring to the industry in general he stated: "We can show a clean bill of health to a very large extent" . . . and "There are derelictions here and there which we all resent." He referred to "one locality where if the advice of the institute had been followed there would not have been serious unemployment." Such statements would not have been made if they were not intended to emphasize two important points:

First: The steel industry is against the long day and week. Second: A few companies by their derelictions are threatening to destroy goodwill the steel industry has won in the past seven years.

A court or censor cannot be set up in the steel industry, as in baseball or motion pictures, to bring to judgment unruly elements. But if the majority of steel companies pursue an enlightened labor policy and they are injured in public estimation by a few who refuse to obey the code, it is only a question of time until the few "will be made known."

The steel industry almost to a unit has followed the example set by the leading companies in stabilizing wage rates. A few of the smaller producers have reduced rates, but the wage earners thus affected probably do not exceed 1 per cent of the total number now engaged. The industry's influence in this respect has been of far-reaching importance and benefit to the country, yet there has been no praise of it for this.

Barbed shafts—million-dollar bonuses, overworked employes—are "front page stuff," not bouquets. This shows on what little evidence of a restricted character a general suspicion or conviction may sometimes be based.

South Formulating a Labor Policy

The South's industrial expansion in recent years has been so much more rapid relatively than the North's that new problems have been thrust upon it. It is going through some of the same evolutionary stages that accompanied industrial growth in the North. An industrial labor policy fundamentally should be no different for the North, South, East or West, but there will at times be deviations due to location.

As an evidence that the South is trying to work out its own problem the Institute of Public Affairs of the University of Virginia is endeavoring to formulate "A Labor Policy for the South." It had before it last week John E. Edgerton, president, National Association of Manufacturers, who declared that the open shop, unrestricted freedom of contract, and individual liberty within the law, must be the root of industrial success. It also listened to Magnus W. Alexander, president, National Industrial Conference board, who favored an enlightened viewpoint and humane relations.

Unemployment comes and goes quickly. It always offers the steel industry an opportunity to repair, build and prepare for larger things. If now the whole of the industry could shape its course to a definite objective, and emerge united on an enlightened labor policy, the effect of unemployment would soon wear off, and the industry as a whole would no longer be reproached for the "derelictions" of a few.

Editorial Leadership

TO PROVIDE information useful to its readers is the primary editorial function of a business paper. It may be performed in either of two ways.

The first, which is easier and less expensive, is to wait until subscribers demand a specific service, and then give it to them.

The second, which is more difficult and invariably more costly, is to anticipate the readers' needs, and to provide for them before demand crystallizes.

STEEL—like its predecessor *Iron Trade Review*—pursues the latter policy. Its editors consider it part of their jobs to know their readers' problems intimately and to seek the kind of editorial information that will be most valuable in solving them.

The success of this policy is attested by the fact that during the past 15 years every important advance in editorial service to the steel industry—with perhaps one exception—has been initiated by this publication.

It was *Iron Trade Review*, now STEEL, which first inaugurated the annual compilation of statistics showing the distribution of steel consumption. Likewise it was the first to compile monthly figures on steel ingot output. Its series of articles "Large Uses of Steel in Small Ways" was the earliest systematic editorial effort to stimulate interest in markets for steel.

This publication was the first in the steel industry and among the first in any industry to announce the tungsten-carbide cutting tools. It was the first to present authoritative articles on the now familiar chromium-nickel (18-8) alloys.

STEEL's Business Trend section antedates similar services in other business papers. Inaugurated in April, 1922, it came into being when industrial executives were thirsty for business facts. For more than eight years it has been the outstanding service of its kind throughout the entire business press of the country.

This publication was the first to recognize the importance of the automobile industry as a consumer of steel. In addition to its Detroit market reports, it has been presenting fortnightly since July, 1927, sidelights on the relations of the automobile industry to the steel industry. Under the title, "Mirrors of Motordom," these articles have become one of the most closely read features in STEEL.

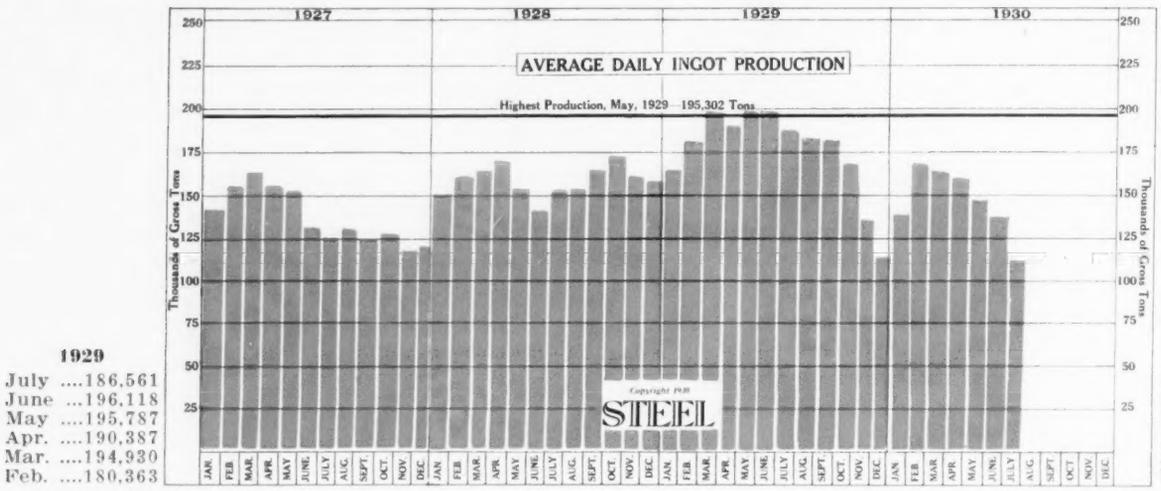
The real test of the value of these and other editorial services initiated by STEEL is found in their enthusiastic acceptance by its readers and in the zeal with which other publishers adopt the ideas developed by STEEL. In the case of "Mirrors of Motordom," at least one business paper has attempted to imitate these articles, and other publications are reported to be contemplating similar action.

As a reader of STEEL you are assured of the benefits of an aggressive editorial policy which is closely attuned to the rapid movement of industry. STEEL is responsive to the needs of its field.

IRON TRADE REVIEW
STEEL

OLD ENOUGH TO KNOW THE GREAT TRADITIONS OF STEEL—
YOUNG ENOUGH TO LEAD THE INDUSTRY IN A MODERN AGE

THE BUSINESS TREND



1929	
July	186,561
June	196,118
May	195,787
Apr.	190,387
Mar.	194,930
Feb.	180,363

1930	
July	112,823
June	137,610
May	149,066
Apr.	159,764
Mar.	165,381
Feb.	169,930

Drought Is Sinister Factor In Business Outlook

FOR the moment, the almost nation-wide drought occupies the center of the business stage. To the farmers the prolonged dry spell is a serious menace, and to industrial leaders it is a new and unknown element in a situation that already was bad.

It is too early to appraise the probable effect of the drought on business recovery with any degree of certainty. With rainfall throughout the eastern central agricultural belt in July averaging only about 30 per cent of normal, it is plainly evident that farmers' income from crops, livestock and dairy products will be much less than expected. This curtailed purchasing power by such a large consuming group, coupled with the already diminished buying resulting from industrial unemployment, cannot help but affect the return of business prosperity. Droughts of seriousness comparable to the present one are infrequent. Business has had only meager experience with industrial depressions accompanied by droughts. Therefore it is difficult, if not impossible, to attach the proper degree of importance to this present threat.

Statistics Show July Production Rate at Extremely Low Levels

Production statistics for July, announced during the past few days, provide an actual measure of the extent of curtailment in output. The daily rates for steel ingot and pig iron are low enough to be distinctly disappointing, although there was abundant warning that the volume would hit rock bottom.

Steel ingot production in July was at the rate of 112,823 tons daily, the lowest point since September, 1924. The nearest recent low level was in December last year when the daily average dropped to 116,120 tons. Pig iron output in July was at the daily rate of 85,110 tons, which is the lowest since October, 1924. The drastic measures adopted to bring blast furnace operations in line with demand are indicated by the fact that on July 31 only 144 of the country's 312 stacks were active.

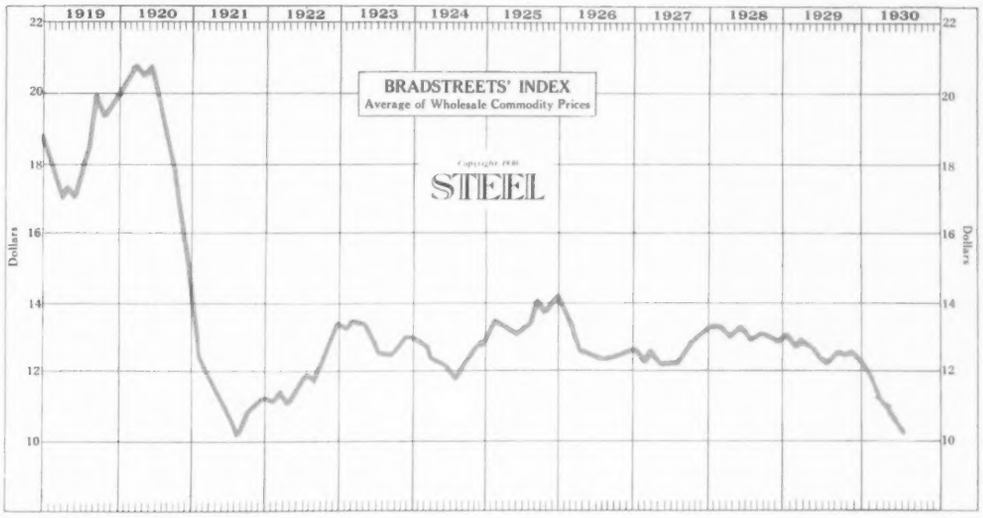
At close range these low production figures are disturbing, but in retrospect they appear in a somewhat more favorable light. The very severity of the curtailment is evidence that the steel industry has learned to trim its sails when a lull occurs. This is a feat which many other industries are attempting, but with varying degrees of success.

Competent Control of Operations Is Credit To Steel Industry

Closely related to regulation of operations to fit demand is the record of unfilled orders. Unfilled bookings of the United States Steel Corp. on July 31 were slightly over four million tons and showed an increase of 53,000 tons over the June 30 balance. Since the backlog had shrunk in April, May and June, the slight gain in July is indicative of a carefully controlled operating rate. The moderate reduction of the corporations operating activity in July reflected a let up of specifications on existing orders.

Other statistical sidelights on the business situation reveal no important changes. Commercial failures in July were practically the same as in June, but with liabilities much lower than at any time in recent months. Freight car orders registered an encouraging, although moderate, increase in July.

After gaining steadily for several weeks, freight car loadings again have suffered a relapse. The price situation still is uncertain. Occasionally signs of firmness appear, but they usually fail to develop into consistent opposition to price decline.



	1930	1929
Aug. 1	$10.45	$12.63
July 1	10.56	12.49
June 1	10.77	12.46
May 1	10.94	12.68
Apr. 1	11.18	12.87
Mar. 1	11.22	13.00

Bradstreet's Index of Commodity Prices Now at 1915 Level

Bradstreet's index for Aug. 1 stands at $10.45, the lowest for any month since November, 1915. Wholesale prices have been declining since 1920, and if the present cycle is to continue similarly as the last two, as shown by the National Industrial Conference Board's index which appears on page 38 of the July 17 issue of STEEL, the general trend of prices will be downward for some time. According to Bradstreet's index, wholesale prices have declined since last October without an interruption. Retail prices, which are always slow to reflect falling wholesale prices, are now beginning to come into line, and wages in some industries are commencing to be adjusted to the low level of commodity prices. This is done to retain the same relative purchasing power.

Commercial Failures Hold Same Level While Liabilities Make New Low

Commercial failures, as reported by R. G. Dun & Co., for July remained at about the same level as that of the previous month. For July insolvencies numbered 2028 as compared to 2026 for June and 1752 for July, 1929. While the increase for the month is negligable, failures are still 16 per cent above a year ago. It is also to be noticed that July failures did not exhibit the usual seasonal decrease at this time.

While the number of insolvencies stayed about the same, liabilities dropped 37 per cent to a new low for the year, though still 23 per cent above 1929. The total of $39,830,000 for July is in sharp contrast to June's $69,130,000, which is the high for the year. This reduction in July is mainly due to fewer failures of companies of $100,000 liabilities and over.

Liabilities

July, 1930	$39,830,000
June, 1930	63,130,000
July, 1929	32,430,000

Number

July, 1930	2,028
June, 1930	2,026
July, 1929	1,752

A UNIVERSITY OF METAL PROGRESS

The Technical Sessions Are Your Classrooms . . The Exhibits Your Laboratory

During the week of

NATIONAL METAL CONGRESS

and

NATIONAL METAL EXPOSITION

to be held in

STEVENS HOTEL, CHICAGO

SEPTEMBER - 22 - 23 - 24 - 25 - 26

MACHINE SHOP PRACTICE DIVISION A S M E

IRON AND STEEL DIVISION A S M E

AMERICAN SOCIETY FOR STEEL TREATING

AMERICAN WELDING SOCIETY

INSTITUTE OF METALS OF THE A I M E

IRON AND STEEL DIVISION A I M E

IT would take more than 10 ordinary sized volumes to reprint the complete technical and practical papers and verbatim discussions of the sessions of National Metal Congress. It would take as many more to illustrate and describe the exhibits of the Exposition. It would take months to read them. And even then the subjects probably would not be as clearly understood as though you actually heard the discussions and saw the exhibits. That is why you can learn more in a week from the "classroom" sessions of National Metal Congress and the "laboratory" exhibits of National Metal Exposition than you can from months of book study. It is education in its most practical and profitable form.

If your work touches in any way on the production, selection fabrication, inspection, treatment, welding or application of metals, this is a week of education that will be valuable to you. That is why you should make your reservations NOW to be in Chicago September 22nd to 26th inclusive.

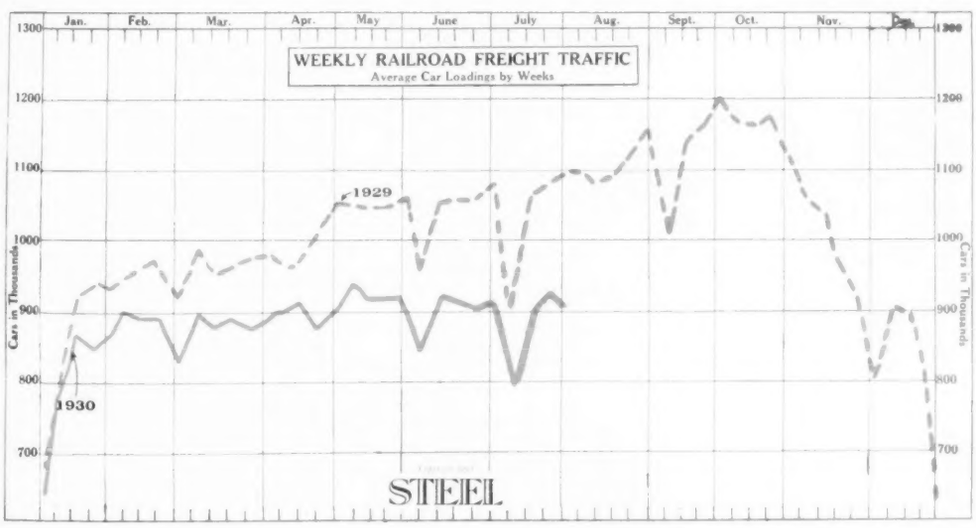
	1930	1929
July	85,110	122,016
June	97,817	123,837
May	104,564	125,753
Apr.	106,371	122,106
Mar.	104,930	119,662
Feb.	101,640	114,942

Average Daily Pig Iron Output Lowest Since October, 1924

In June the average daily production of pig iron fell to the lowest level since October, 1924. The daily average for the month amounted to 85,110 tons as compared with 97,817 tons in June and 122,016 tons in July, 1929. Production for the year reached its peak in May, since that time the daily average has been declining. At first the reduction was moderate. However, as time went on this falling off was accelerated till in July curtailment over the previous month amounted to 33 per cent, which is one of the most drastic the industry has witnessed. A substantial reduction, nevertheless, was to be expected in July as a large number of blast furnaces were banked during June with almost as many more being banked during the month of July.

Freight Car Loadings Fail to Show Improvement

Freight car loadings for the week ending July 26 failed to show the usual seasonal advance. For two consecutive weeks after the July holiday, slightly less than regular seasonal improvement occurred. Instead of improving at a subnormal rate loadings for the week of July 26 decreased, falling off approximately 10 per cent from the preceding week to 919,349 cars. This makes the poorest showing since 1924, which was a mild recession year. Last year and the year before loadings rose steadily from the first week in July through the first week in August, then after a slight decline continued till the September holiday week. So far, car loadings appear to be unable to progress much past the 900,000 mark around which they have been hovering most of the year.

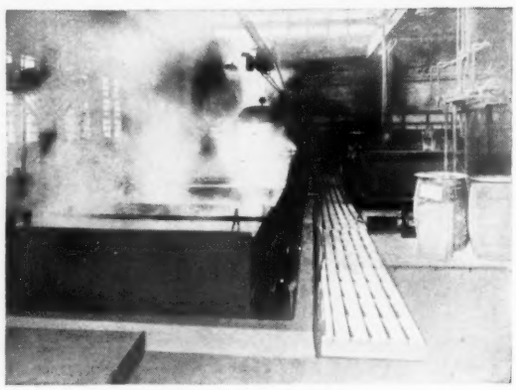


1930	
July 26	919,349
July 19	928,256
July 12	915,985
July 5	792,141
June 28	936,848
June 21	920,859

1929	
July 19	1,079,968
July 26	1,102,553
July 12	1,066,414
July 5	911,143
June 28	1,096,569
June 21	1,069,874

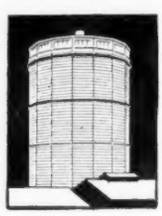
Higher efficiency

Lower costs

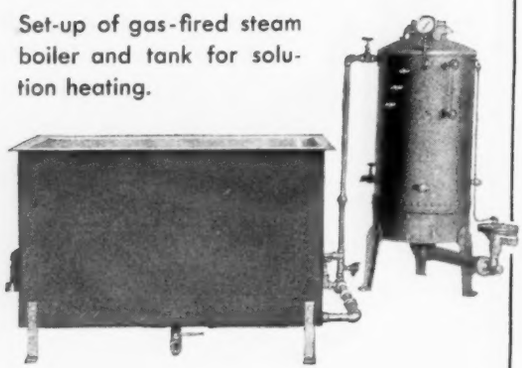


Gas-fired immersion coil heater applied to the heating of metal cleaning solution.

THE application of gas to the problems of solution heating has resulted always in higher efficiency with greatly lowered operating cost. Gas heat promotes longer tank life; its temperature is under easy and accurate control—a vital necessity in many phases of solution heating. Modern equipment makes it possible to operate gas-fired solution-heating tanks far over normal capacity, while modern turndown equipment provides the ultimate in economy when tanks are idle or waiting. The free book "Gas Heat" tells you what other industries are doing with gas-fired solution-heating equipment. Send for your copy.

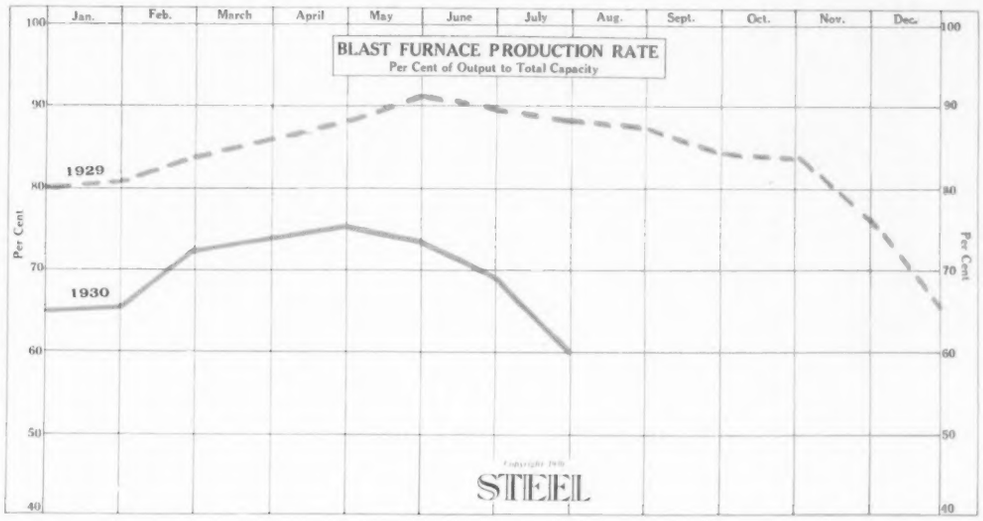


Set-up of gas-fired steam boiler and tank for solution heating.



AMERICAN GAS ASSOCIATION

420 Lexington Avenue, New York



	Per Cent
July, 1930	60.3
June, 1930	69.3
May, 1930	74.2
July, 1929	87.2
June, 1929	88.5
May, 1929	74.4

Blast Furnace Production Rate Drops Sharply in July

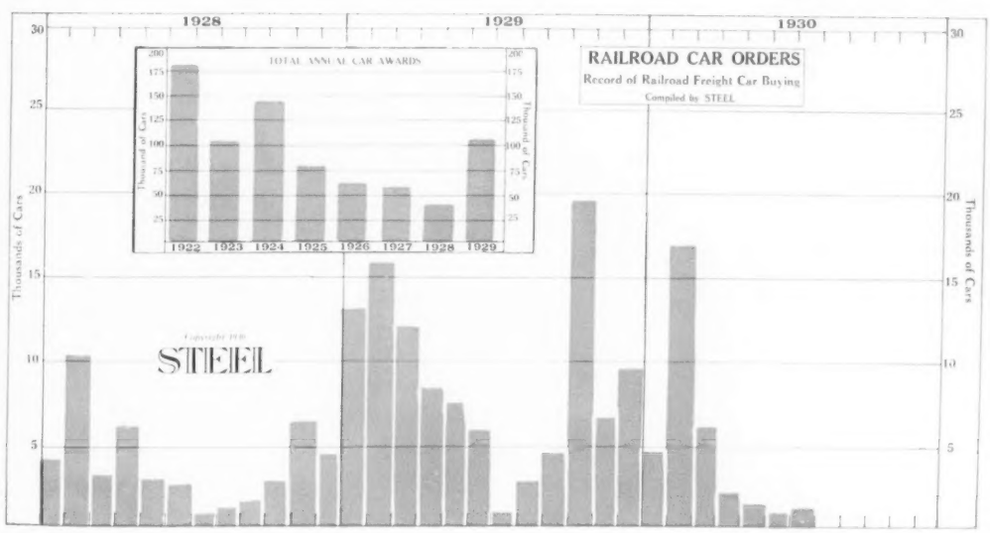
Production rate of pig iron in per cent of operating capacity during July has been sharply curtailed for the second consecutive month. Since the high point of 75.4 per cent for blast furnace operations reached last April, the production rate has fallen off with increasing severity through July. For July activity stands at 60.3 per cent as contrasted with 69.3 per cent for June and 87.2 per cent for the corresponding period one year ago.

In June, 20 blast furnaces were banked and in July eighteen more were banked or taken out of operation, leaving only 144 stacks in use out of a possible 312, which is the smallest number in blast since August, 1922.

Railroad Car Orders Start Seasonal Advance

Domestic freight car awards during July increased for the first time in four months. For the past two years the lowest level of the year has been reached in July. In 1930, however, it appears that the low for the year was moved up a month to June in light of the increase which occurred last month. This increase may be viewed as a forerunner of improvement.

Orders for July totaled 1348 cars as compared to 998 for June and 341 for July, 1929. While this makes a fine showing when compared to these individual months, a comparison of the seven months cumulative totals reveals that awards are 46 per cent below those of 1929 but 17 per cent above those of 1928.

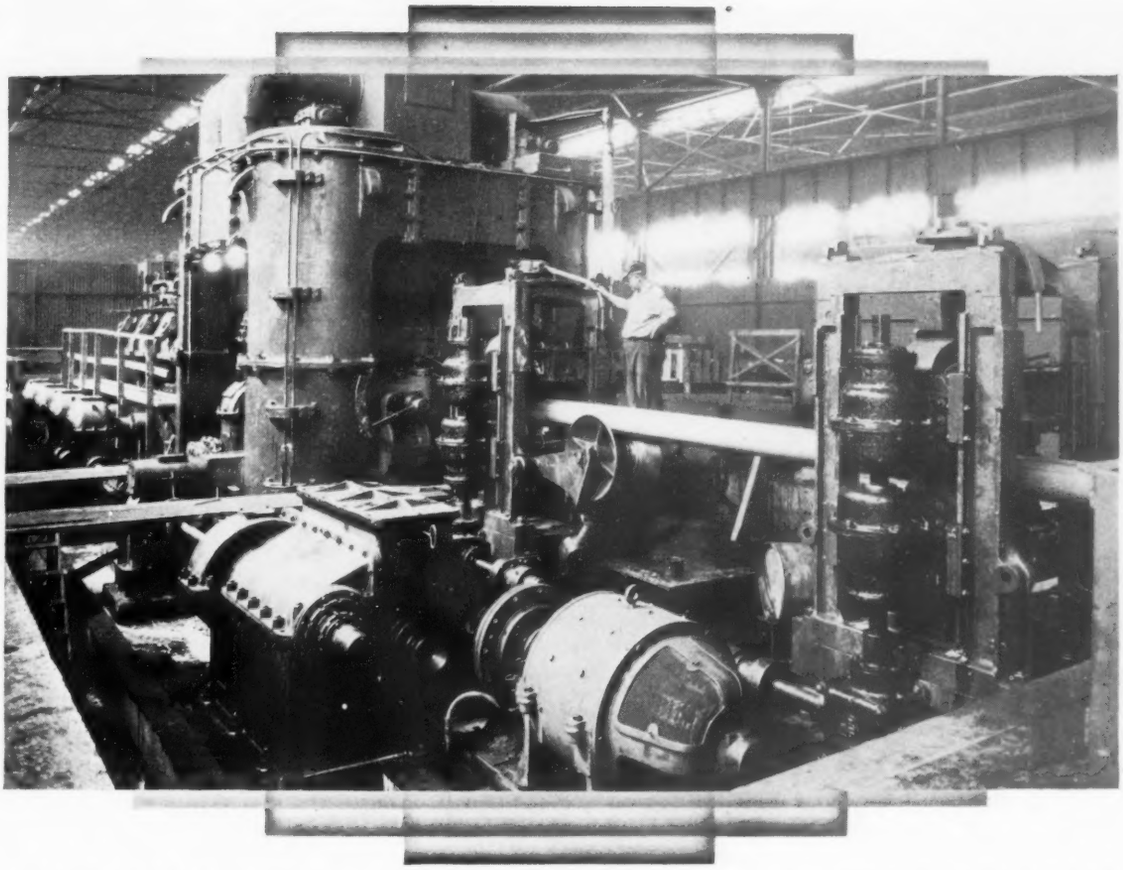


	1930	1929
July	1,348	341
June	998	5,886
May	1,392	7,562
Apr.	1,997	8,205
Mar.	6,118	12,023
Feb.	17,027	15,944

Photograph by Eugene Hutchinson, Chicago

When Steel Bids Men To Wait

Patiently watching their furnace, these workmen hope against difficulty as raw material is converted into steel. This striking human-interest photograph was taken in the plant of the Colorado Fuel & Iron Co., Pueblo, Colo.



A length of 8-inch pipe after passing through the welding machine, the large unit in the left background. The two roll stands check on straightness and roundness of the pipe section

Producing Electric Welded Pipe

Republic Steel Corp. Now Operating Unit Which Forms and Butt Welds 8-Inch Pipe by New Process at 40-60 Feet per Minute

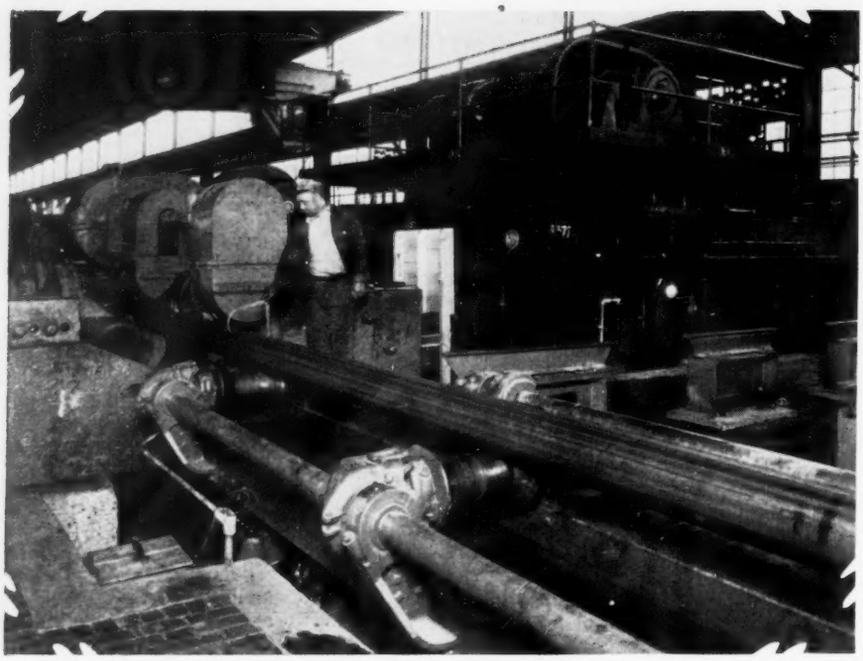
BY A. H. ALLEN

Editorial Representative, STEEL

THE race for the rich pipe markets of southwestern oil and gas interests continues at a rapid pace. Numerous lines for transporting gas and petroleum products from the southwestern fields to middle western consuming points are either in process of construction or definitely laid out, involving tonnages of steel estimated upward of half a million. Large steel producers and fabricators are battling keenly to develop steel pipe which can be manufactured rapidly, economically and with physical qualities outranking competitors' designs.

Electric welded pipe, a comparatively recent development, is being specified for a large mileage of these new pipe lines. Several producers already are actively engaged in this field and others are preparing to enter the competition. One of the most recent entrants is the Republic Steel Corp., Youngstown, O., which has developed an electric welded pipe for which exceptional qualities are claimed. Complete absence of scale and oxide from the surface, a weld which is stronger than the adjacent metal, a sound microscopic structure with the absence of any high heat characteristics induced by the welding operation, and a process which is entirely automatic, the human element or equation having negligible effect on the finished product, are some advantages of the pipe pointed out by the manufacturer.

Present installations at the Republic mill include one experimental unit which has been in operation approximately one year and which has turned out nearly 2000 miles of 4-inch and 6⅝-inch diameter pipe; also one production



Scaling a length of electric welded pipe as it emerges from the straightening machine. Superstructure of the large circular saw for cropping the pipe ends is visible in the background

unit which has been in operation approximately six weeks and which is producing 8-inch pipe. The pipe is being produced in 40-foot lengths at a speed of from 40 to 60 feet per minute. Some 10-inch pipe also has been made in the one main mill now in operation. Eventually three production units will be in operation in this mill which covers an area of 1100 by 60 feet, construction now being in progress on the second of these units. The three units will produce pipe ranging from 2 to 16 inches in diameter, according to present plans.

The Republic welding process is an amplification of the Johnston process for electric welding, patents on which have been controlled by Steel & Tubes Inc., Cleveland, a subsidiary of the Republic Steel Corp. This process applied to the welding of small diameter tubes and conduit and with the recent merger of this interest with the Republic company was developed to include the welding of larger diameters and thicker walled pipes. The process now used by the company is a resistance welding process in which alternating current at high amperage is employed, no external weld metal being necessary.

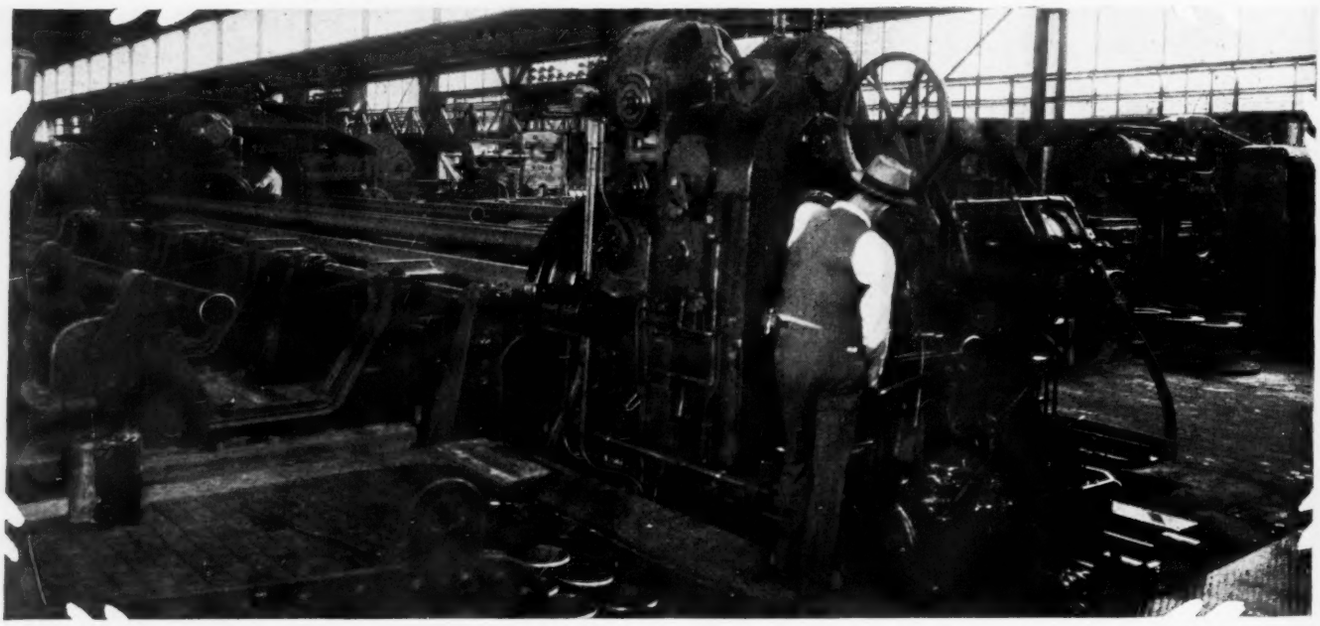
Following a section of pipe through the mill, it is received in the form of skelp which is fed into a large trimming machine where both edges are simultaneously machined square and smooth. The skelp, approximately 45 feet in length, is carried down along a roll table to either a pickling unit or a sand blasting unit where both sides of the skelp are thoroughly cleaned and all scale and oxide removed. The skelp then proceeds to a forming mill comprising 12 stands of forming rolls. These rolls continue the forming process until the pipe is approximately in its finished shape.

Edges Fused Together

Upon emerging from the final forming stand the pipe continues directly into the welding machine. Here electric current is passed between two electrodes, generating sufficient heat to fuse together the two edges of the skelp into a continuous seam. A stream of coolant flows over the pipe as it passes beyond the electrodes and means are provided for eliminating any burr developed. The pipe then passes through truing roll stands to make certain that the section leaves the welder approximately straight and true. Speed of forming and welding depends upon the pipe size but as mentioned previously ranges from 40 to 60 feet per minute.

The pipe section is conveyed through a straightening machine and then to a circular saw which crops about 30 inches from each end of the section. The crop ends are placed in a hydraulic press and flattened to determine the soundness of the welded seam at the point of sawing.

After the pipe is cropped in the saw some form of machining is given each end. It may be beveled, squared



This machine was developed for the purpose of beveling, threading or squaring the pipe ends before shipment. Most line pipe is beveled for subsequent oxyacetylene welding into the line

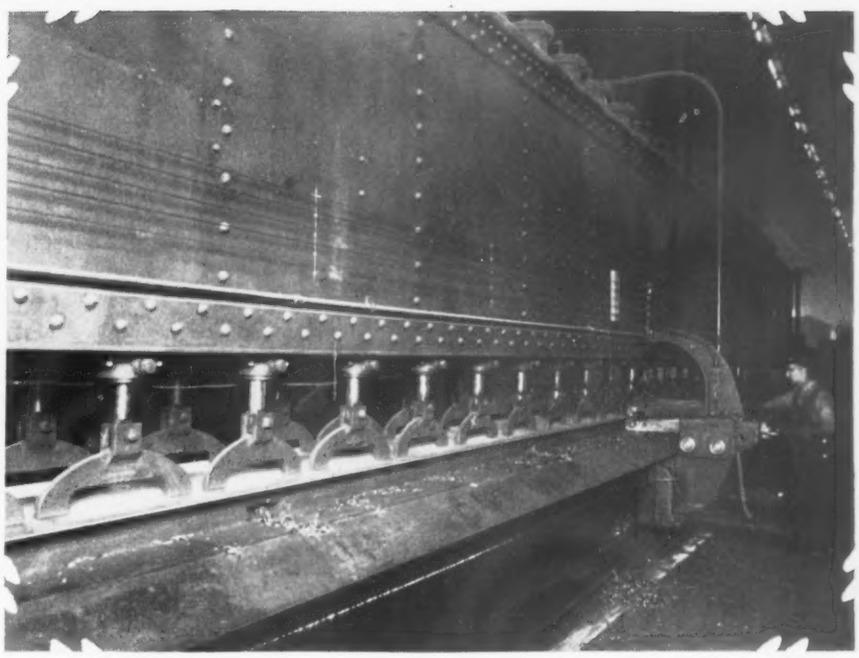
or threaded. Most pipe, later to be oxyacetylene welded into a line, is beveled at the ends, at an angle of about 45 degrees. Thus, when two sections are joined a V slot is formed which can be filled with weld metal.

The next step in the process is a hydrostatic test. For this the pipe is placed in a large frame and connected at either end to water pressure, whereby pressure on the inside of the pipe is brought up to a certain standard rating. Three pneumatic hammers, mounted on the testing machine, deliver a series of blows at the center of the pipe and at either end, these blows being delivered in a line 2 inches away from the line of weld. While this test is in progress inspectors examine the pipe for any possible defects. The testing machine is capable of handling about 20 lengths per hour.

Coated with Primer

If the section of pipe is found to be sound it is rolled onto a storage table, later to be picked up by a crane and taken to another section of the mill where a coat of primer is applied, the length measured and stenciled on the surface and the pipe stored for subsequent shipment. Lengths vary usually from 36 feet to 43 feet, depending upon the amount cropped off by the saw. The maximum length is limited only by the capacity of railway cars in which the pipe is shipped. Pipe is all of standard thickness, the 4-inch size being 0.237-inch gage thickness and the 8-inch being 0.277-inch gage.

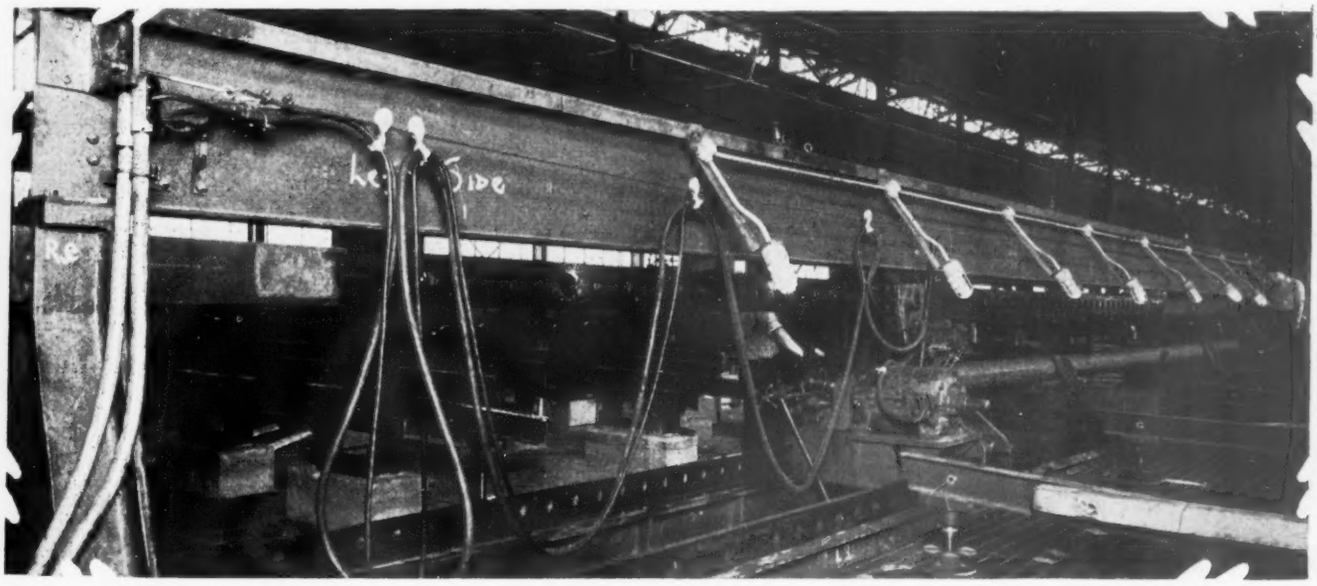
Pipe which is to be used for transporting gasoline must be absolutely free from corrosion on the inside and consequently, before shipment, is capped by means of a small hand-operated pneumatic machine which forces a thin metal cap into each end. This cap is allowed to remain in the pipe until it is placed in service or until the length is welded into the main line.



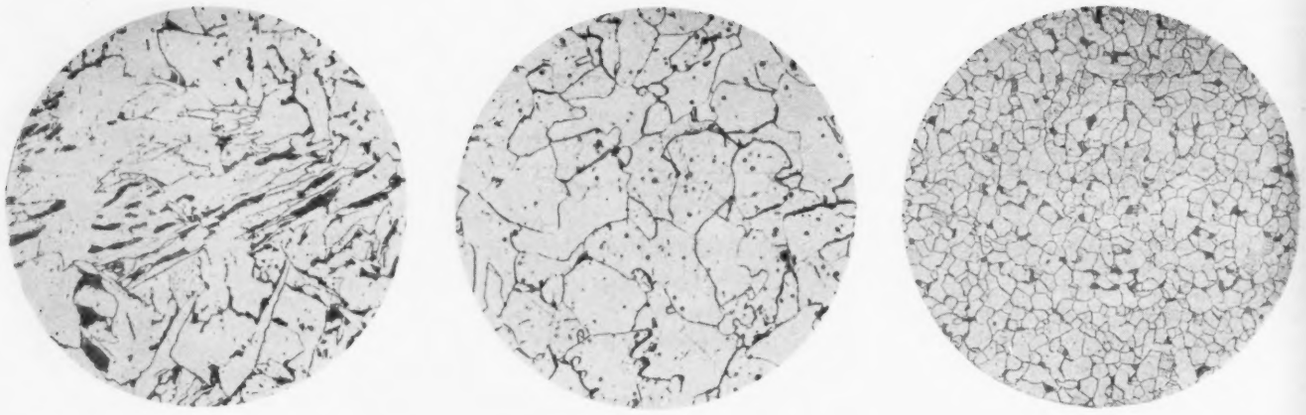
Large trimming machine which simultaneously machines both edges of 50-foot skelp. The two rows of air jacks hold the skelp in place as the tool carriage travels along its length

Trimming machines for squaring off the edges of the skelp are of interesting design and where described in detail on page 124 of the May 1 issue of IRON TRADE REVIEW, predecessor of STEEL. This machine consists of a narrow 50-foot bed on which the skelp is slid and held in place by 50 air jacks mounted in the head of the machine. These jacks are forced against the surface of the skelp and hold it firmly, while a tool carriage on either side of the machine travels along the full length of the plate and trims off the edge. Each tool carriage is equipped with 16 tools above and below the plate, producing a smooth, clean cut edge. The carriages are propelled by an electric driven screw which travels the full length of the machine. Two of these units, built by William Sellers & Co. Inc., Philadelphia, especially for the Republic Steel Corp., are in operation at the plant.

These units are located at one end of the mill which is in direct connection with a skelp mill. The ends of the machine are open and joined to roll tables. When one plate has been trimmed another is placed on a roll table at one end of the trimming machine, butted against the trimmed piece. The tool carriage clamps both lengths at the joint and thus draws



Testing machine which subjects each pipe length to hydrostatic pressure and hammering treatment. Three air hammers are mounted in the frame and deliver blows in a line 2 inches away from the electric welded seam



Photomicrographs at 100 diameters showing microstructure in the line of weld of two types of welded pipe. At the left, a high-heat structure in butt welded pipe; center, a normal or refined grain structure in butt welded pipe; and right, the normal structure of electric welded pipe

the new plate in as the trimmed plate is being ejected at the other end

Photomicrograph at 12 diameters of electric welded pipe. The line of weld is barely discernible, running vertically through the center

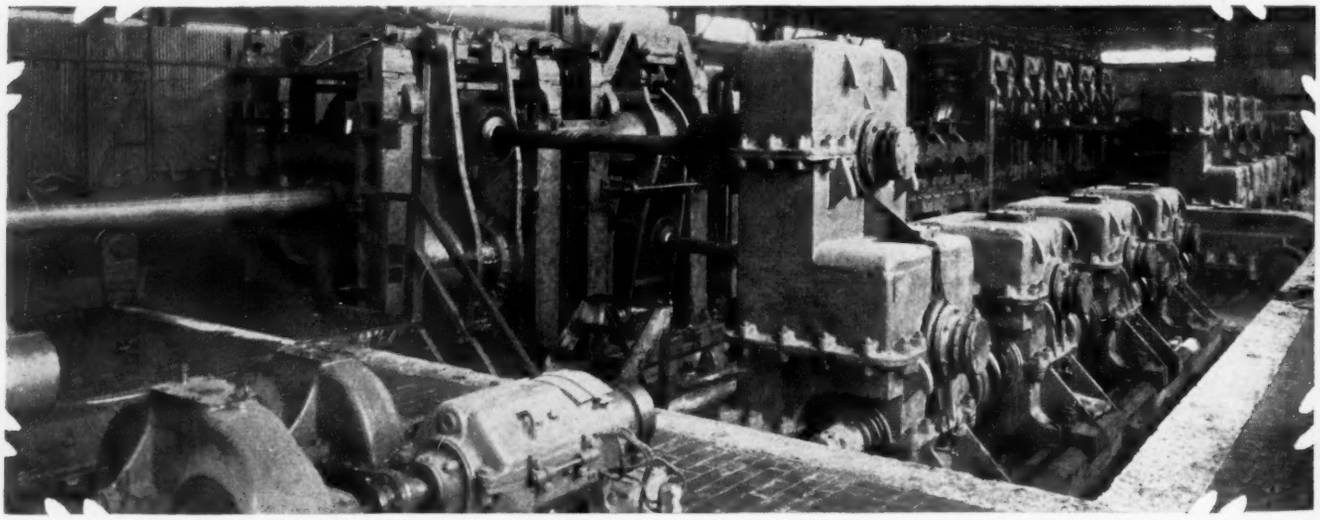
of the machine. The skelp follows directly down through the mill on roll tables and after being trimmed, is placed in a specially designed sand blasting machine which thoroughly scours both surfaces, removing all traces of corrosion or scale.

Accompanying photomicrographs show the uniform and low heat microstructure of the pipe in the vicinity of the weld. Due to the rapid dissipation of the heat of welding a high heat structure is avoided and a uniform grain size maintained.

High Amperage Essential

A special substation for supplying electric power to the welding machines has been installed. Equipment consists mainly of a large number of transformer banks for supplying current of the high amperage required by the welding machine. Since the heat required for welding the pipe is proportional to the square of the current times the resistance offered by the pipe, and the resistance can be assumed a minimum, due to the narrow width of metal between electrodes, it is evident that a current of exceptionally high amperage is required to produce a welding temperature. This high current also necessitates the use of heavy busbars, insulators, etc., in the welding machine.

Photomicrograph at 250 diameters of electric welded pipe. The line of weld passes vertically through the center of the illustration



Stands of heavy forming rolls are required to shape the flat skelp into circular form, before entering the welding unit

Timken Roll Neck Bearings *in* Continuous Merchant Mill Service

This Mesta continuous merchant mill in the plant of The Timken Steel & Tube Company was the first complete continuous-type rolling mill ever equipped with Timken heavy duty roll neck bearings.

This mill consists of 16 stands, and it rolls 6″ x 6″ billets down to small merchant sections.

In this installation severe rolling pressures (179,000 lbs. at 60 R.P.M.—145,000 lbs. at 50 R.P.M.) are complicated by the necessity of extreme accuracy. Rounds as small as 5/16″ wire have been rolled on this mill, on a production basis, with tolerances that came within .001″ to .0015″.

During the entire time that the mill has been in service, the Timken Bearings have acquitted themselves as splendidly as they have in the 28″ and 22″ mills, with all of the characteristic Timken advantages well to the fore, including the rolling of large tonnages without bearing replacement, consistently high average output, 40 to 50% saving in power, pronounced lubrication economy, elimination of mill shutdowns through bearing failures and greatly reduced maintenance costs.

This mill has been operating for better than a year with not a single instance of bearing trouble or failure—a record hitherto unheard of in rolling mill practice.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

Commercial Hardening by Cyaniding Process

BY E. F. DAVIS
Metallurgist, Warner Gear Co.

Part III

CYANIDE furnaces are gas, oil or electrically fired. The gas furnace is the best and most economical; oil furnaces are satisfactory if correctly designed, and electric furnaces expensive. Gas-heated furnaces permit simple design, better control and improved life of pots. Oil-fired furnaces require carefully designed construction and involve higher maintenance costs. Electric furnaces yield the best B.t.u. efficiency, but are highest in initial cost and repairs.

Furnaces for cyaniding are either round or rectangular. The round furnace has the advantage of utilizing a minimum of floor space and offering a minimum of pot surface for radiation and volatilization losses. On the other hand, the rectangular furnace is superior for production per cubic foot of cyanide or pot area.

Gas Presents No Problems

When gas is employed for fuel no marked problems in furnace design are presented. Round pots up to 36 inches diameter and rectangular pots up to 30 inches long and 16 inches wide may be fired successfully with a single burner. Over these dimensions double burners usually are advisable. The hearth height should be about 29 inches for ease of working. The combustion chamber should be ample but not excessive. A spreader block for dividing the blast is advisable but not essential and sometimes a detriment in the larger furnaces due to its cooling action. A stack is necessary for the removal of products of combustion and a hood over the pot connected with the stack. The port for the exit of furnace gases should not be near the pot if this can be avoided. The air pressure should be low, not over 4 to 5 ounces. Most furnaces burn excessive air. The writer does not favor fan-type burners although these are sometimes necessary in smaller plants not equipped with blower systems.

One of the most common mistakes made in designing cyanide furnaces for the burning of oil is lack of attention to the fact that oil must be atomized and heated to a gaseous state before it is available for combustion. Oil burners merely function as means for spraying finely-divided oil in the furnace and if the atomizing principle is correct almost any burner is suitable. They do nothing toward increasing furnace efficiency. The usual fault does not occur in the atomizing but in the design of the combustion chamber whereby the combustion reaches its hottest stage at the exit port or in the stack but is incomplete in the combustion chamber. This necessitates forcing the oil and air in the attempt to raise the pot temperature high enough for operation, lowering fuel efficiency and producing a condition in the furnace destructive to pot life and fire brick.

The use of a preheating box or auxiliary combustion chamber for preheating the oil to a gaseous state before entering the main combustion chamber often improves the efficiency of oil burning. This has been done by many plants with good success. Where round furnaces are employed the cyclonic action of the flame around the pot generally gives the fuel ample traveling distance to effect perfect combustion but the hot-test point often is near the top of the furnace and this is the cause of round oil furnace pots burning out so frequently on the sides near the flange.

Electric furnaces have the advantage that they may be placed directly in machining lines without the necessity of running fuel and air piping. They are neat and compact and require no stacks beyond a fume hood. Their initial cost, however, is four to six times that of a gas or oil furnace. Molten cyanide will short an electric unit and cyanide fume has a deteriorating effect on heat resisting wire and ribbon; hence it is absolutely necessary that electric furnaces be sealed thoroughly against fumes. Many of the earlier type were not provided with perfect sealing and much prejudice against them was developed on this account. Another trouble which has caused the abandonment of electric furnaces is the slow heat transfer when the furnaces are forced and the inability of producing work as fast as is possible in the gas or oil furnace. Electric furnaces heat by radiation only and heat cannot be transferred from the units by radiation as rapidly as by convection heating of gas and oil. However, for some types of manufacturing such as tool work the electric furnace has given excellent service.

Develops Continuous Furnace

A new type of furnace developed by the writer and installed at the Warner Gear Co., Muncie, Ind., has been the continuous cyanide furnace operated under automatic control. The pots are 60 inches long, 20 inches wide and 14 inches deep. It is built as a double furnace unit consisting of two pots laid longitudinally, each with separate combustion chambers fired with two gas burners. Two parallel screws carry the work through the furnace. The work is hung on the screws and the rotation of the screws carries the work through the length of the pot. The diagram on Page 50 shows the essential elements of this furnace.

The advantage of this type of furnace is the fact that at no time is the cyanide chilled by the addition of a large mass of cold work, but the pieces are added at definite intervals and far enough from the end where the heated steel is removed from the furnace so that the introduction of cold work does not affect the temperature of the bath. This enables more uniform fueling conditions and closer control. The thermocouple is at the discharge end of the pot. This furnace, in spite of the temperature differential between combustion chamber and cyanide bath, is controlled to within 10 degrees. The control used is the Geissinger-Leeds Northrup system.

Production from these furnaces is

RELATIVE merits of gas, oil and electric furnaces for cyaniding work are discussed in the accompanying article, the third and concluding one of a series, the previous two instalments having been presented in the July 17 and July 31 issues of STEEL. The accompanying instalment also enumerates steps to be taken in cyanide fume prevention and other precautions which the process demands. The author, E. F. Davis, is metallurgist, Warner Gear Co., Muncie, Ind.

▼ ▼ ▼ ▼ Has Always Given Good Service

says 25-Ton Gas Crane User

The service which the maker builds into a crane is important, of course, but no more so than the service which he maintains on it.

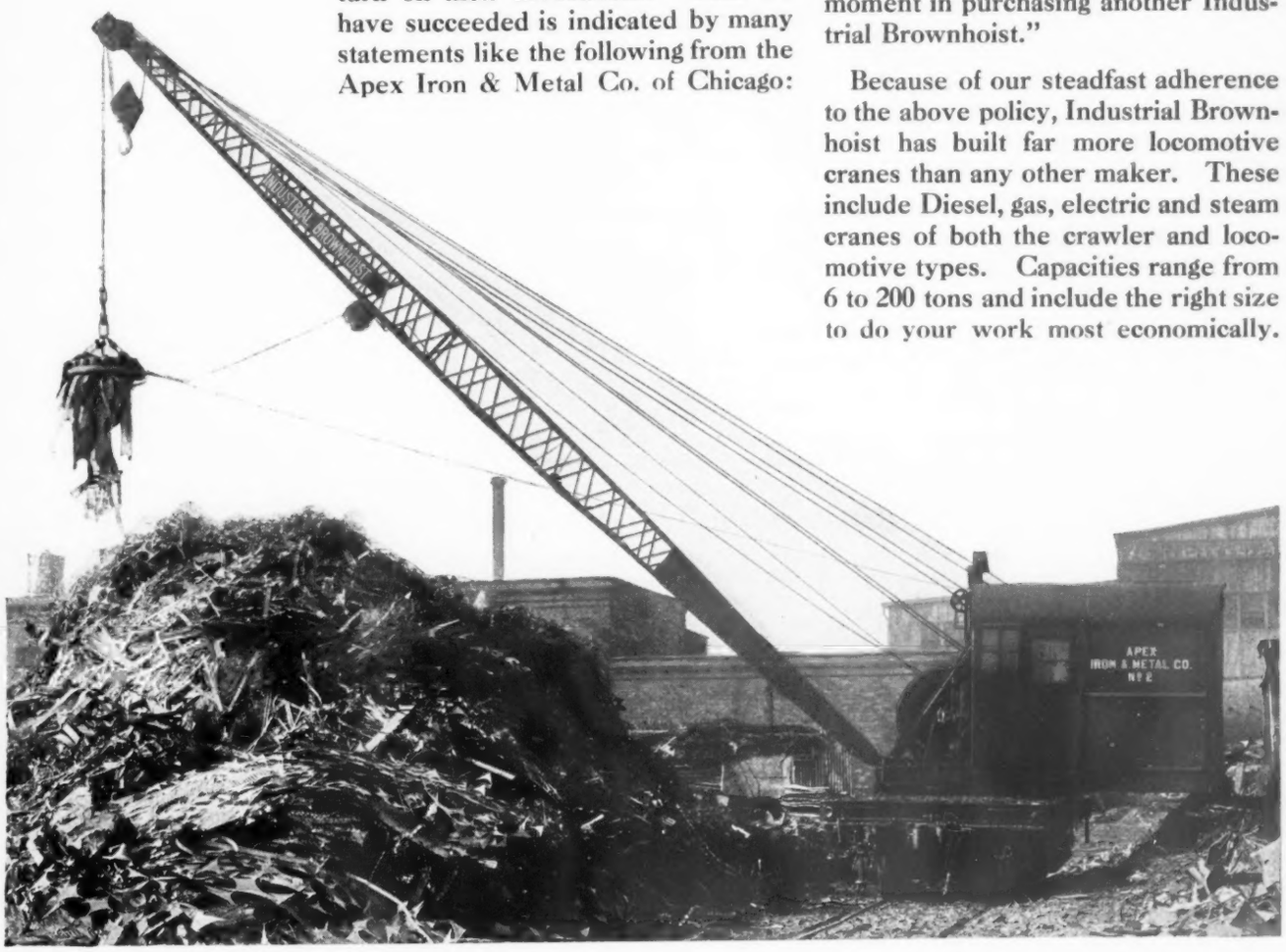
It has always been the Industrial Brownhoist aim to not only build good cranes, but to stand back of them and help their owners get the biggest return on their investment. That we have succeeded is indicated by many statements like the following from the Apex Iron & Metal Co. of Chicago:

"We have been users of an Industrial Brownhoist Crane for the past four years and are very much satisfied with it.

"We have always been given good service.

"If we were to need another crane at this time we would not hesitate a moment in purchasing another Industrial Brownhoist."

Because of our steadfast adherence to the above policy, Industrial Brownhoist has built far more locomotive cranes than any other maker. These include Diesel, gas, electric and steam cranes of both the crawler and locomotive types. Capacities range from 6 to 200 tons and include the right size to do your work most economically.



Industrial Brownhoist Corporation, General Offices, Cleveland, Ohio

District Offices: New York, Philadelphia, Pittsburgh, Detroit, Chicago, New Orleans, San Francisco, Cleveland.

Plants: Brownhoist Division, Cleveland; Industrial Division, Bay City, Michigan; Elyria Foundry Division, Elyria, Ohio.

INDUSTRIAL BROWNHOIST

excellent, each pot producing 350 pounds of work per hour and one operator serving four pots. The complete cost of operation is $0.0031 per pound or about 1/3 of a cent per pound.

Alloy pots have not been a marked success for cyanide work except in electric furnaces. In this type of furnace the exterior of the pot is not subjected to the destructive oxidizing and corrosive influences of gas and oil. Another reason for alloy material being preferable for electric cyaniding furnaces is the necessity for thin walls in the pot to increase the efficiency of heat transfer and at the same time to provide enough strength to the walls.

In gas and oil furnaces from 1500 to 3500 heat hours is a fair average for the life of a pot, although in electric furnaces pots show better life. Alloy cyanide pots often fail by corrosion, for the sodium carbonate in the sodium cyanide exerts a destructive influence on chromimum alloys. This effect seems to be more marked in the higher chromium mixtures than in the lower.

Pressed steel pots are usually too thin in wall section to yield satisfactory services and being of low-carbon steel oxidize rapidly where exposed to the flame. From 350 to 600 hours is their average service. The use of pressed steel is confined to the smaller round furnaces.

Cast iron is permeated rapidly with cyanide and pots of this material seldom give over 150 hours service. Cast iron pots are rarely used for production hardening.

Cast steel is unquestionably the best material for gas or oil-fired furnaces. Cast steel pots should give on an average 1500 hours life in a well-designed gas furnace. In oil-fired furnaces the average life of cast steel is seldom over 900 hours.

It has been found practical to omit top plates and metal rings for supporting cyanide pots, but to have the bottom of the flange recessed behind the rim and set the pot flange in fireclay. Although the fireclay cracks by the expansion and contraction of the pot in heating and cooling, nevertheless it forms an effective seal to prevent the cyanide splashings from melting and running down the exterior surfaces of the pot. If this occurs rapid destruction of the pot follows.

Much could be said regarding foundry practice in casting cyanide pots for the success or failure to yield economic pot life depends on the casting skill of the foundry. If the foundry is unable to produce consistently sound castings, free from porosity and sand holes, no furnace design will give long pot life. Changing pots, interruption of production and incidental furnace repairs are costly and the less frequently they are made the lower will be operating costs.

Cyaniding by the aerocase method is a modification of the old Shimer process which used calcium cyanimid ($CaCN_2$) as the activator. The Shimer process was introduced as a method for carburizing rather than cyanding, owing to the possibility of obtaining deeper case depths in a shorter time than was practical by ordinary cyaniding operations. The necessity for using deep pots and means of submerging the cyanamid prevented wider use of the method.

In the aerocase method calcium cyanide ($Ca(CN)_2$) is employed as the activating agent. The bath salt is not a cyanide but a fused mixture composed of two parts by weight of calcium chloride and one part of sodium chloride. This mixture properly fused has a melting point of 950 degrees Fahr. The term 510 by which the manufacturers designate the bath salt refers to the Centigrade reading of the melting point of this mixture. Calcium cyanide readily submerges in this bath and fairly shallow pots may be employed with success. Pots 12 inches deep have been used successfully.

Calcium cyanide supplied for this process is a 50 per cent crude salt fused in cakes weighing 4½ to 5 ounces. An analysis furnished by the manufacturer is as follows:

	Per cent
Calcium cyanamid ($CaCN_2$)	2.0- 5.0
Calcium cyanide ($Ca(CN)_2$)	43.0-48.0
Sodium chloride (NaCl)	30.0-35.0
Calcium oxide (CaO)	14.0-16.0
Carbon	4.0- 5.0

The bath mixture composed of the chlorides is melted until the pot is nearly full. Then calcium cyanide cakes are added until 0.5 to 1 per cent of the hardening agent is in the bath. A heavy sludge forms on the surface. This is skimmed off after about 10 minutes; then 5 or 6 more cakes are added and the bath is ready for operation. The operating temperature is from 1450 to 1600 degrees Fahr. The writer prefers the higher temperature due to the fact that it increases the carbon content of the case and enables more rapid carburizing.

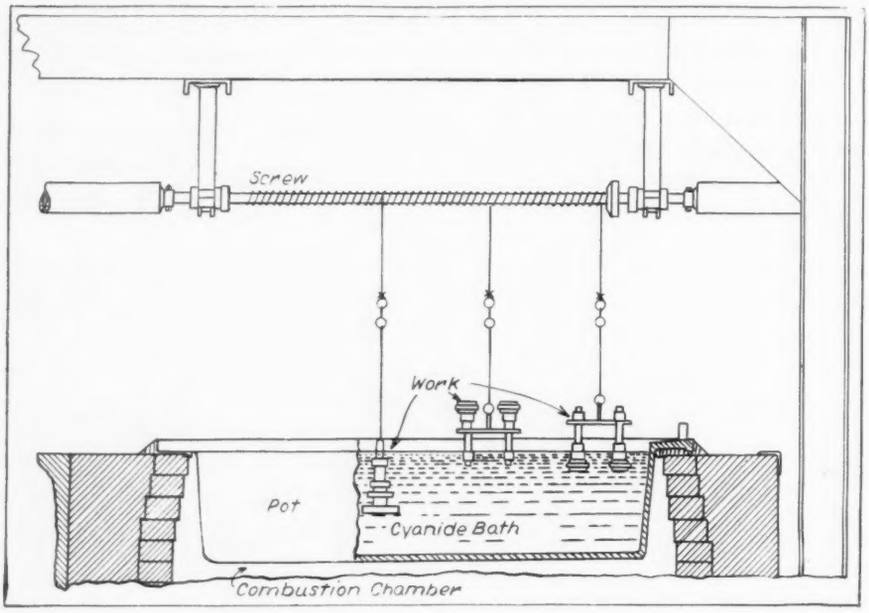


Diagram of continuous gas-fired cyaniding furnace. Rotation of the screw carries the work through the bath. Temperature can be controlled to within 10 degrees

Depth Proportional to Time

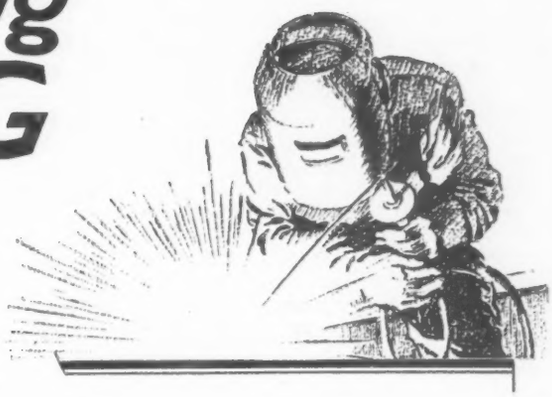
The work is placed in the pot and allowed to remain for 1 to 3 hours depending on the depth of case desired. This method will produce case depths of 0.010 to 0.030-inch. A case of 0.030-inch is about the practical limit.

The case obtained is similar to the carburized case obtained by pack hardening and gas carburizing methods although not quite as high in carbon, usually ranging from 0.70 to 1.00 per cent carbon depending upon the time and temperature. The case is also slightly nitrogenized but the content is seldom over 0.17 per cent which is less than that contained by work carburized from nitrogen cements such as leather, and a third less than the cyanide case.

The process may be termed an immersion carburizing process and should not be regarded as a cyaniding but an intermediate process between the two methods suitable for diversified products of light section such as plates, washers, thrust bearings, small gears, etc.

The chemistry of the process is somewhat obscure as yet but no doubt carbon monoxide gases are pronounced factors in the carburiz-

To manufacturers who are redesigning for WELDING



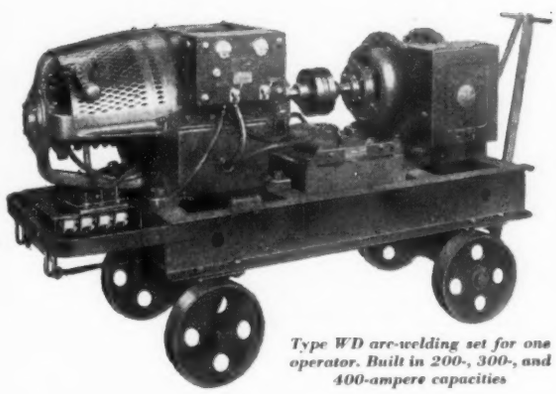
No need for delayed schedules when you swing over to arc-welded production. ¶ Right now, your men can be trained for practical arc welding in our free school in Schenectady. Booklet GEA-1125, or your nearest G-E office, will explain. And our complete stocks can supply you promptly with: the famous "WD" single-operator sets; with multiple-operator sets, built to supply welding current to as many as fifteen men; automatic sets that sew up steel seams at high speeds; atomic-hydrogen sets for unusual work; electrode wire; electrode holders; helmets; shields; cable; and everything you need for modern arc welding. Your nearest G-E office stands ready to help you.

Standard 50-lb. bundle of electrode wire

Well-designed, metallic-electrode holder

Extra-flexible, well-insulated welding cable

Strong, light-weight, black-fiber helmet



Type WD arc-welding set for one operator. Built in 200-, 300-, and 400-ampere capacities

We cordially invite you to use these facilities by communicating with your nearest G-E office.

530-87

GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

ing reaction. In actual operation the bath contains only about 0.25 per cent calcium cyanide and decomposes to calcium oxide. The formation of this latter compound affects the viscosity of the bath and it is necessary to add the chloride salt at intervals of about 3 hours. The usual proportion is 2½ pounds of chlorides to each pound of calcium cyanide.

The presence of the calcium oxide makes washing of the parts somewhat difficult and the ordinary washing compounds such as soda ash retard rather than facilitate the cleansing action. Calcium oxide in the presence of sodium carbonate is converted to calcium carbonate which is practically insoluble. For this reason only clean hot water should be employed. Another troublesome feature is the black sludge which forms on top of the bath. Parts should be completely immersed in the bath and care should be taken that no sludge remains on the work while quenching for it cannot be dissolved from the parts.

Due to the presence of chlorides used in the bath salts the work is more apt to rust than pieces hardened in cyanide; hence a second washing in soda ash solution or trisodium phosphate should follow.

Cyanide Fume Prevention

Cyanides when molten exert a certain vapor pressure which increases as the temperature is raised. This may constitute 0.5 to 2 per cent daily of the volume of salt employed. This is a property similar to the evaporation of water and consists of a continuous escape of vapor particles from the surface of the bath. This fume as it arises probably possesses the same composition as the bath but owing to the rapid decomposition of the cyanide in air it rapidly loses its cyanogen content. As it disseminates in the air it may contain from 2 to 12 per cent sodium cyanide. Analysis taken of condensed fume accumulated near the top of a 50-foot stack over a group of cyanide furnaces showed the following composition:

	Per cent
Sodium cyanide	12.00
Sodium carbonate	63.25
Sodium chloride	9.60
Sodium bicarbonate	0.10
Sodium sulphate	3.60
Iron oxide	8.40
Water	3.80

Occasionally plants which are large users of cyanides for hardening are located in residential neighborhoods and are subjected to complaint from the white dust which settles adjacent to the plant. Due to its alkaline nature, this dust attacks paint on houses and buildings, spots varnish on automobiles, injures vegetation and being poisonous is regarded as a health menace.

Fortunately this fume is dissolved readily in water and may be removed expeditiously by drawing all waste gases into a scrubber, the fume passing upward through a spray of water and rendering the gases quite harmless.

Cyanide Poisoning

Nearly every writer on cyanides and cyanide hardening assumes a more or less frightening attitude on the extremely poisonous nature of this salt; yet men operate cyanide furnaces for years without any more deterioration in health than is noted from any other heat treating operation. When men are affected it is usually because sensible precautions are not taken to hood the pots or the operators are careless.

Men have recovered who have received severe cyanide burns, even where opportunity was present for absorption through the skin due to the large area affected. It is true that cyanide burns are slow in healing, but caustic burns are also slow in healing and cyanides are always more or less caustic. In fact, the sores developed from both caustic and cyanide are similar; but the writer never has observed any man burned by cyanide who was poisoned also.

Inhalation of cyanide fume and dust first produces sneezing and dryness of the throat, often accompanied by a bitter taste. Continued breathing of the fume results in redness of the nostrils and running of mucous due to irritation of the nasal membrane. But the warnings of incipient cyanide poisoning are so evident that steps can be taken to correct conditions before serious illness results.

Sudden deaths resulting from breathing cyanide fume or vapors from molten cyanide pots are extremely rare. In fact, the irritation may be due to the alkaline nature of the fume rather than its cyanogen for no hydrocyanic acid or any other lethal gas can be identified as present in the fume. Sodium carbonate is always present in the fume and it is scarcely possible that hydrocyanic acid gas could exist in .the presence of this strongly alkaline substance.

Danger Is Exaggerated

The writer does not wish to infer that sodium cyanide is not extremely poisonous when taken internally, for quantities as small as 0.1 gram have been known to have caused death. However, its deadly characteristics have been much exaggerated and minute quantities are not necessarily fatal. In fact, sodium cyanide has been employed in medicine as a sedative. According to Merck (1929 edition) sodium cyanide is used in doses of one-twentieth to one-quarter grain for spasmodic coughs and nervous irritability.

Sodium cyanide accidentally introduced into the mouth can readily be recognized by its persistent bitter unpleasant taste. The poisonous properties are due to its reactions with saliva and stomachic acids, forming hydrocyanic acid. Sodium hydrate to neutralize the acids and ferrous sulphate to precipitate the cyanide into an insoluble substance, which resembles prussian blue, is the best antidote. Emetics of course should follow. Antidotes should be applied without delay for cyanide poisons rapidly.

Precautions in Using Cyanide

Goggles always should be used when operating cyanide pots. Cyanide in the eye has frequently resulted in blindness of the member injured. Goggles should be worn when sweeping the tops of cyanide furnaces, changing pots, ladling cyanide, repairing furnaces or breaking up cyanide cakes.

Work should never be placed in molten cyanide when cold or wet. Both cause explosions. Nitrite and nitrate salts such as are used for tempering baths should never be placed in molten cyanide. These have resulted in serious explosions. No acids of any kind should be permitted to come in contact with cyanide. This produces hydrocyanic acid which is fatal if inhaled in any quantity.

Suction fans and forced drafts are advisable to remove fumes. Natural drafts are not always dependable under humid atmosphere conditions. Drinking fountains should not be placed too close to cyanide pots or quenching tanks where the drinking water might become contaminated by cyanide splashings.

It is essential that cyanide pots be analyzed regularly for cyanogen content in order to maintain the cyanide at the proper composition in the various production pots in operation and to make the necessary corrections. A sample is best obtained by inserting a small rod in the bath and removing it instantly. A thin thimble of cyanide is congealed on the rod which can be readily pulverized in a mortar, weighed and titrated within a few minutes.

—THE END—

Building Steel Institute Prepares for Convention

A preliminary program now is being arranged for the eighth annual convention of the American Institute of Steel Construction to be held in Pinehurst, N. C., beginning Oct. 27. The addresses will be divided between technical and economic subjects. Prominent on the program will be a symposium on construction problems which will consume the whole of one morning. Charles F. Abbott, 200 Madison avenue, New York, is executive director of the institute.

GREENAWALT for Sintering

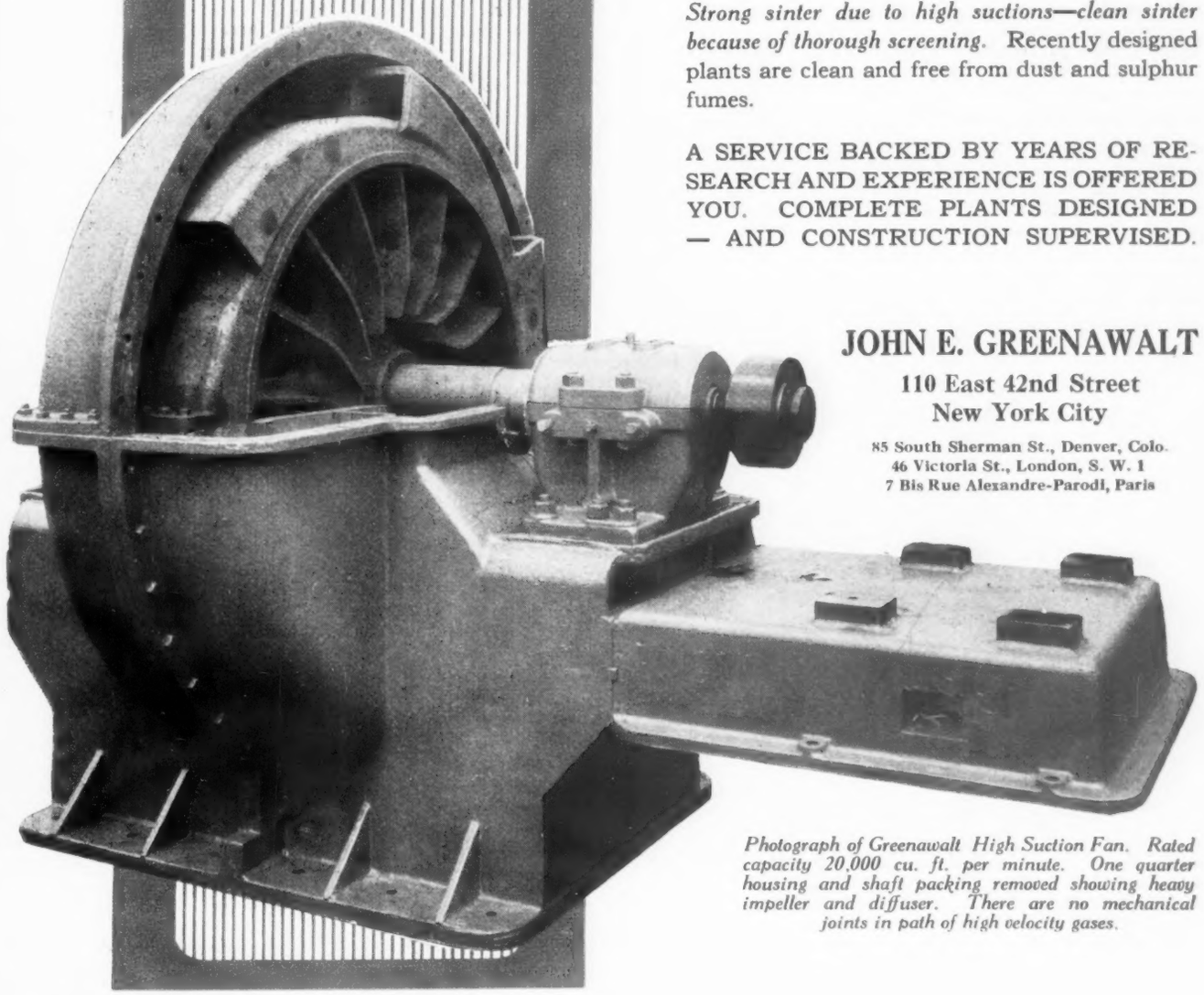
Strong, Clean Sinter

Greenawalt Sintering Plants, by the removal and sintering of all fines from your blast furnace charge, greatly increase the capacity of the furnace, overcome dust losses, and reduce operating costs.

Greenawalt Sintering Plants are simple, with equipment massive and rugged in construction. Only a few moving parts to wear—these can be quickly replaced at small cost and with negligible delays.

Strong sinter due to high suctions—clean sinter because of thorough screening. Recently designed plants are clean and free from dust and sulphur fumes.

A SERVICE BACKED BY YEARS OF RESEARCH AND EXPERIENCE IS OFFERED YOU. COMPLETE PLANTS DESIGNED — AND CONSTRUCTION SUPERVISED.



JOHN E. GREENAWALT
110 East 42nd Street
New York City

85 South Sherman St., Denver, Colo.
46 Victoria St., London, S. W. 1
7 Bis Rue Alexandre-Parodi, Paris

Photograph of Greenawalt High Suction Fan. Rated capacity 20,000 cu. ft. per minute. One quarter housing and shaft packing removed showing heavy impeller and diffuser. There are no mechanical joints in path of high velocity gases.

Building Forming Mill for 26-Inch Welded Pipe

GROWING demand for heavy-gage, large-diameter welded pipe for use in long distance gasoline and oil pipe lines has given considerable impetus to the development of pipe forming mills. The design of these mills presents a number of interesting problems, arising partly from the character of the material to be worked, and partly from the requirements which the finished product must meet.

Forming Requires Care

With regard to the material, high-carbon steel plate usually is used, which, while fairly ductile, does not lend itself particularly well to deformation at too rapid a rate of speed. This factor is the one that has the greatest influence on the requirements of the finished product, for reasons easily explained. The welding is done by the automatic electric arc process, therefore every precaution must be taken to assure proper preparation of the rolled plate, physically as well as mechanically.

In the first place, the distance between the edges must be normally uniform throughout the length of the section. Otherwise the finished weld will be uneven, and may have weak spots which are likely to develop into subsequent leaks. Also the edges must be smooth, free from dents, or waves and of uniform cross section, or they cannot be welded properly. Furthermore, the pipe must be free of locked-up stresses that might, and probably would, cause trouble after welding. The effects of these stresses on welded pipe is too familiar to require comment. Finally, the machine must be designed for high rate of production.

The various operating and construction problems implied in the foregoing have been effectively worked out in a new 26-inch pipe forming mill now being built by the Yoder Co., 5500 Walworth avenue, Cleveland. The mill, as shown in the accompanying illustration, is of the 2-high continuous type, consisting of 12 stands, and designed to roll pipe of diameters of 18 to 26 inches and gages up to ¾-inch. Its rated operating speed is 100 feet per minute. The 12 stands are individually driven through reduction gears and pinion stands, giving a total speed reduction of 50 to 1 from 40-horsepower adjustable constant-speed compound-wound direct-current motors.

Of the 12 stands, the first ten are provided with horizontal rolls only, while the last two stands have both horizontal and vertical rolls. All rolls are of cast iron. The accompanying illustration shows stand No. 12 in the foreground with the pipe emerging completely formed and ready to have the joint welded.

Power for the motors is supplied from a common bus, and the control is so arranged that there is no variation in relative speed between any of them. Being the first of its kind to be built, the mill incorporates several decidedly novel and interesting features of design and construction. For instance, tapered roller bearings being used throughout on the roll shafts, pinion shafts, the gear and pinion shafts of the gear reduction units, and on all guide and idler roller shafts.

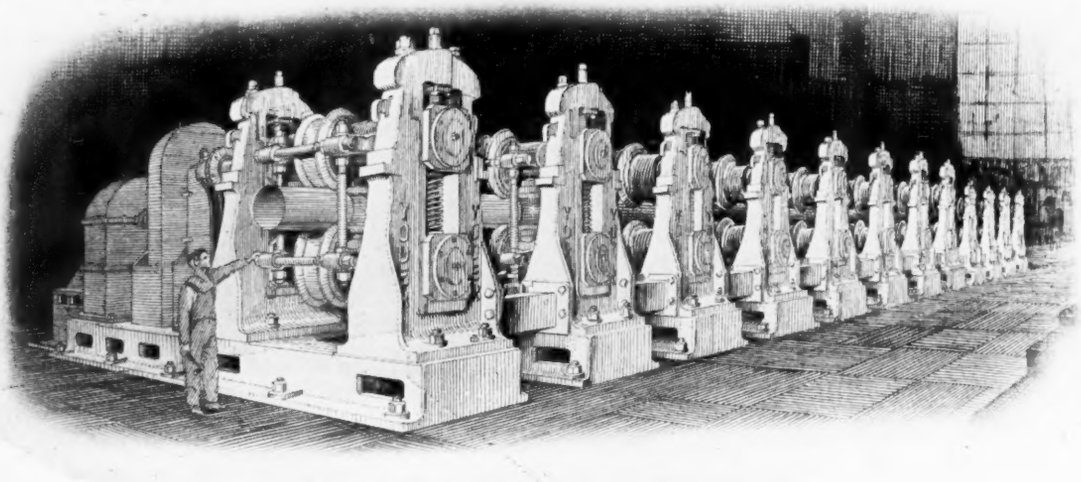
Pennsylvania Still Premier Pig Iron Producing State

Pennsylvania by a wide margin retained her lead in the production of pig iron in the first half of 1930, when production totaled 18,055,348 gross tons, compared with 20,352,561 tons in the last half of 1929 and 21,404,654 tons in the first half of 1929, states the American Iron and Steel institute, New York, in its semi-annual compilation given in the chart presented on the opposite page.

Of the 18,055,348 tons of iron made in the first half year, 52,232 tons was charcoal and 18,003,116 tons was coke iron. Ferroalloys output was 415,304 gross tons, against 441,362 tons in the last half of 1929 and 415,406 tons in the first half. Including ferroalloys and charcoal iron, total output of blast furnaces in the first half of 1930 was 18,470,652 tons.

Pennsylvania accounted for 5,722,782 tons of all classifications, Ohio 3,928,199 tons, Indiana and Michigan 2,322,926 tons, Illinois 1,957,738 tons.

Half-yearly production of basic iron was 10,834,749 tons, bessemer and low phos 4,182,780 tons, foundry iron, 1,968,018 tons, malleable iron 981,810 tons, forge iron 39,413 tons, and miscellaneous 48,758 tons.



The new mill, of the 2-high continuous type and 12 stands, is designed to roll pipe of 18 to 26 inches diameter with wall thicknesses up to ¾ inch

Powerful Milling Machine Speeds Billet Chipping

BILLET or bloom chipping, a laborious and expensive operation confronting manufacturers of rolled products, has been simplified by a new machine which by means of a series of conveying rolls carries the billet to the cutter head and later passes it on through completely chipped. This machine, built by the Bonnot Co., Canton, O., and shown in the accompanying illustrations, can be used to chip billets of any cross section and any length up to 30 feet without necessity for adjustments.

Two prominent features of the machine are its simplicity and speed, the latter being due largely to its mechanical flexibility. Since six motions of the cutting head are achieved with one lever, it is possible to remove flaws of any character or direction without any waste motion. As a result, one man—not necessarily skilled—can complete the chipping of the average billet in about half an hour. Principal dimensions of the machine are overall length 23 feet, overall width 6 feet, and overall heighth 10 feet. The weight installed is 27 tons.

Essentially the machine consists of two parts, a fixed base and a movable main carriage. The former supports the carriage, the carriage travel mechanism, and the bed and chuck that holds the billet during chipping. The latter carries the cutter head and its driving and travel motors and gears. The base is a heavy semisteel casting, ribbed at frequent intervals. Two channels are provided for the carriage guides, the one in front where the load is heaviest, being a deep V section. This guide is supported by heavy web brackets cast integral with it and with the base.

Billets Can Be Turned

The bed on which the billet is mounted consists of an angle section of semisteel, bolted firmly to the base. The under side of the portion forming the bed proper is ground smooth to provide a bearing surface for the upper surface of the carriage lugs. The bed is equipped with an adjustable manipulator chuck operated by compressed air. Billets can be turned through either 90 degrees or 45 degrees as desired, thus eliminating any necessity for manual handling.

The main carriage is made in two sections, both being solid semisteel castings, bolted together. The upper, which forms the cover, carries the 5-horsepower motor and worm shaft that raise and lower the cutter head. Its removal gives easy access to the cutter drive mechanism. The lower section forms a frame for the carriage that supports the cutter, and the cutter drive mechanism. The bottom is equipped with guides which run in the channels in the base. Guide channels are also provided inside the carriage for the carriage guides.

Lead Screw Travels Carriage

Carriage travel, which provides the forward motion of the cutter head, is obtained by means of a lead screw driven by a 25-horsepower motor through a worm reduction gear. The worm shaft of the gear is mounted in antifriction bearings, a tapered roller bearing being used at one end and a straight roller bearing at the other. The screw is mounted in tapered roller bearings, that at the drive end being of heavy-duty thrust type. This arrangement has been adopted to provide for the thrust reactions caused by pressure of the tools against the work during cutting. Motion is transmitted to the carriage by a heavy bronze nut on the travel screw which engages with two lugs, one on either side, bolted to the carriage.

The arrangement of the cutter head and drive, which are mounted on the movable carriage inside the main carriage, is substantially as follows. The driving is done by a 25-horsepower motor connected to a pinion shaft extending across the carriage by a flexible coupling. The pinion engages with a large herringbone gear mounted on the extension of a worm shaft, the worm engaging with a worm gear on the cutter spindle. Both the pinion shaft and the worm shaft are mounted in tapered roller bearings. The hub of the worm gear is provided with four strong keys, 90 degrees apart, that fit in four corresponding keyways on the cutter spindle. This arrangement permits lateral movement of the spindle through the wheel, without any possibility of looseness. In fact the whole arrangement is calculated to transmit the driving power with a minimum of back lash or vibration likely to cause chatter of the cutting tools. In and out motion of the cutter head is provided by a pilot wheel which actuates a rack and pinion gear on a stationary rod connected to the cutter spindle by a cross link. The cutter head can be moved out a total of 14 inches.

Tools Easily Removed

The arrangement of tools in the cutter head is plainly shown in the illustration. The tools are 2 x 2-inch, including a backing of hardened steel. Removal for grinding, and replacement, are simple matters, and a gage is provided that makes it easy to set the tools for concentricity.

The control of all motor-driven motions, carriage forward and reverse, cutter travel up and down, and cutter rotation, is centralized in

(Concluded on Page 65)

Billet or bloom chipping machine which gives either milling or planing action in removing flaws. (Inset) Closeup of the working point, showing effect of cutter in removal of local or transverse defects

TURNING basin, Houston's ship channel. By deepening and widening an old river bed which extends from the city limits of Houston to the Gulf of Mexico, a deep-water port has been created. Steel from foreign countries is brought direct to the city

Texas, Arena of Conflicting Forces in Steel Distribution

BY W. S. DOXSEY
Editor, Daily Metal Trade

DISTRIBUTION of steel from mills to consumers is going through an evolution. Innovations are being introduced. Experiments, some of them startling and radical in character, are being tried by even the most conservative steel mills. Distributive machinery representing millions of invested capital and the personal enterprise of generations is being discarded.

Significant Researches Under Way

Not in smoke beclouded centers of steel production, nor in bustling industrial areas where steel is fabricated into a legion of products; not in the channels of distribution where the tide of steel flowing from maker to user reaches its peak, but in the markets of far-away Texas where Cotton reigns are these significant researches in the merchandising of steel being conducted.

Texas is a market caldron brewing a strange potion into which have been stirred the bones of competitive contention, the tangled skeins of a transportation net, the troublesome essence of foreign-made steel, and the acrid extracts of conflicting policies, all seasoned with the growing demands of Texas and the Southwest for steel and steel products.

Already the Texas pot has boiled over, into Oklahoma, Tennessee Louisiana and New Mexico. To the South, the Southeast and mountain states the steel mills, the warehouse distributors, and the consumers are tasting the Texas tamale of new selling ideas.

Marketwise, Texas is a paradox. Geographically, its location with respect to the nation's steelmaking centers is one of isolation. Actually, Texas is encircled by a chain of competitive mills that hurdle tremendous distances in their efforts to obtain their share of business from the Lone Star state. Within its boundaries are a rerolling mill making reinforcing bars, and a nail mill. And its southern shores are host to tonnages of foreign steel distinctly distressing to domestic makers.

Steel from Many States

Texas draws her steel from Colorado, from the St. Louis mills, and from the plants at Tulsa, Okla., and Kansas City. Chicago contributes, and so does Kokomo and Indianapolis. Down the Ohio from Pittsburgh and Ohio and Mahoning valley mills flows an impressive part of the steel consumed in the state. Birmingham ships its quota through the Warrior river and the intercoastal canal. From the eastern seaboard mills additional tonnages come in ocean going barges. At ridiculously low rates, in returning cotton ships, steel from Belgium and other European plants is supplied in answer to the call of Texas consumers.

Relatively, Texas is a small market; yet where is there another in the United States that has such a retinue of willing and overwilling suppliers? A complex transportation system brings this steel to buyers in Texas. Some may come direct by rail from the mill to the user. Some may travel the all-water route. A sizeable proportion is moved part water and part rail. The stop-over car is not uncommon, part of the order being supplied by one company and part by a second company somewhere enroute.

Traffic Feats Are Startling

Startling to a high degree are some of the feats of traffic legerdemain accomplished in effecting sales in this territory, especially when competition is particularly keen. The far-away mill gets an order and the company that thought itself secure with an apparent rate advantage is left gaping in astonishment.

On a 2000-pound ton of concrete bars from St. Louis to Houston the rate all-rail is $14.80; by river-rail it is $9. On a long ton of 2240 pounds of concrete bars from Belgium the rate is $3.25. From Pittsburgh to Memphis where pipe is stored for reconsignment to Texas and other points in the oil fields, the barge rate is around 30 cents a hundredweight, compared with a rail rate of 56 cents. Generally, the water rate where the movement parallels rail service is 20 per cent under the rail rate.

The same consumers that are willing to wait two and three months for a shipment of Belgian concrete bars may on another occasion patronize a domestic mill and impatiently demand that the seller ship all-rail instead of water-rail in order to gain a week or ten days. Although the contracts were made on the water-rail basis the mill has the option of absorbing the $3 to $6 difference in rates or incurring the ill will of the buyers.

The development of inland waterways already has had a marked influence on the distribution of steel and promises even more barge

changes in the future. The low rates have figuratively, brought the mills of the North hundreds of miles closer to Texas and to other distant markets, and have saved consumers millions in transportation charges.

This change in the process of shipping steel is bringing about a gradual shift in the points of local distribution. Independent warehouses situated at strategic centers of rail facilities gradually are losing ground to mill-owned warehouses erected at barge line terminals.

At Houston is the splendid new warehouse of the United States Steel Corp., double the size of the great public hall at Atlantic City, and ten times as large as the Houston auditorium where Al Smith was chosen to carry the Democratic banner. Several other steel companies have warehouses in Houston. Others reach the northern part of Texas from modern warehouses on the Mississippi at Memphis. These mill warehouses, reaping the advantages of water shipments, undoubtedly harass the inland distributors, restricting their fields of activity to the vanishing point in some instances.

©Calvin Wheat Studios

Low water transportation rates and mixed and pool car arrangements are a boon to steel buyers in Texas. Houston, shown above, is the principal distributing center

Mixed Carloads Important

But the most significant factors in the Texas market are the mixed car and the pool car.

Excluding the pipe consuming oil companies, Texas has few carload users of steel. The bulk of the steel products used in the state is made up of fencing for the ranches galvanized roofing for domestic and industrial purposes, nails, wire and the like. Most of these products are not handled by steel warehouses but by lumber dealers who serve their communities as general supply stores.

Largely on the insistence of these lumber dealers the interstate commerce commission some years ago granted the application of the carload freight rate on a car of mixed commodities, the rate for the highest class product in the car applying to the entire carload. Thus less-car buyers of any one product became carload buyers by combining enough of several items to make up a minimum car.

The railroads under interstate commerce commission instructions gave buyers carload rates on the cars; and the steel mills, not to be outdone by the carriers, gave these consumers the carload price on each of the several less-car quantities making up the carloads.

To make the situation even more incongruous, all these favors are being extended to the outstanding competitor of steel; namely lumber. For in Texas it is the lumber yard that serves the community with its building materials, and the lumber yard is more interested in selling wood and composition roofing than it is in advocating the use of steel products and galvanized roofing for construction purposes.

Before the mixed-car plan for distributing steel direct from producer to consumer was thoroughly tested, the pool car was conceived and confusion was turned into chaos.

The pool car is a car of mixed contents, but instead of all the goods therein going to the consignee they are divided among several lumber yards and retail hardware or crossroads stores. The mill bills each participant in the pool car individually for his share of the merchandise at the prices generally extended to carload customers. The carload freight rate has applied, and presumably the consignee collects a prorata share of the freight bill from each member of the pool.

Consequently, it is now possible for a retailer in Texas to buy at the mills' carload prices, with carload freight applying, a few bundles of sheets, a roll or two of fencing, a couple of kegs of nails, some wire and stove pipe.

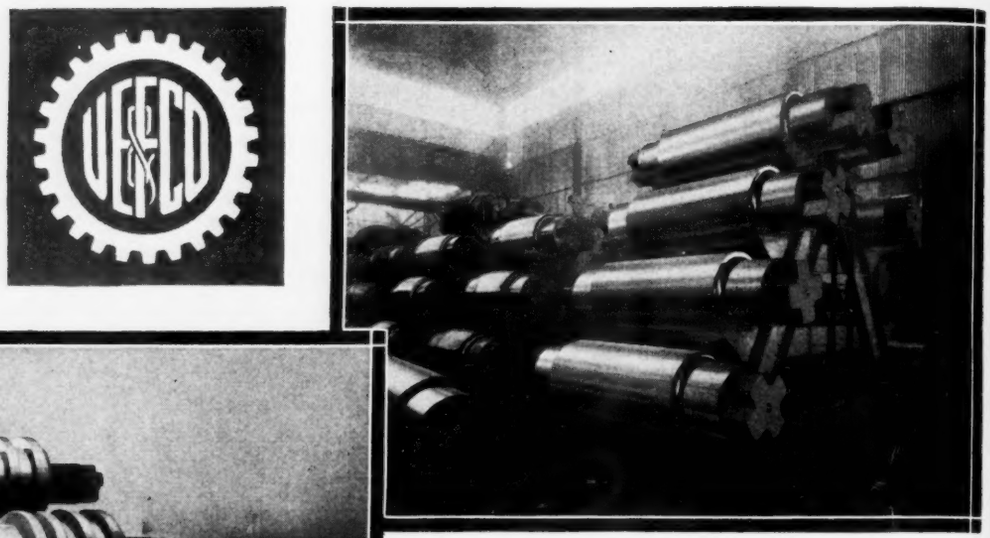
To the warehouse distributors of steel who have been serving southern and southwestern states this maelstrom of mill competition is spelling early destruction, or retirement of their steel departments. Some already have found the pace too fast and have eliminated steel items from their catalogs. Others hoping for relief have to be content with a volume of business trivial in comparison with the volume done before the mixed and pool cars were permitted.

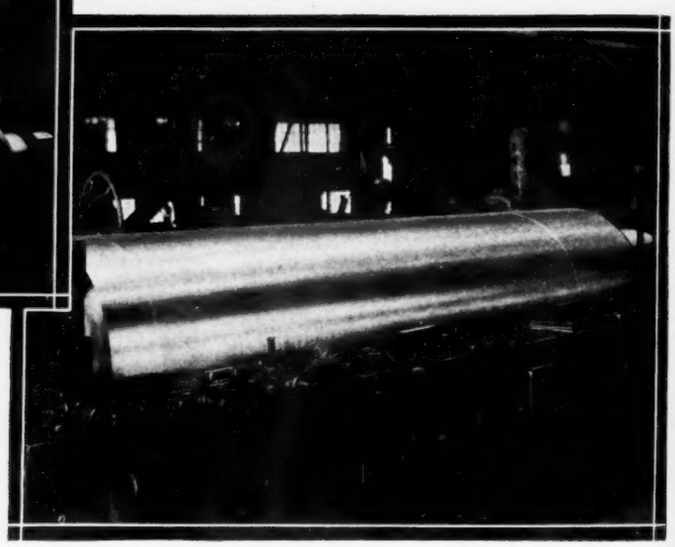
Distributors' Invoices Decline

In some areas the amounts of distributors' invoices for steel and steel products have declined to one-fifth and one-tenth of former sums. The size and variety of their stocks are diminishing while the trend toward larger and more completely stocked mill-owned warehouses is notable.

The situation may be gaged from another angle. When a carload freight rate could be secured only on a full carload of a single item, and when the mills' tonnage prices could

There is a Correct Type of
UNITED





UNITED ROLLS

Unefco Hard	United Spec. Steel
Unefco Medium	Regular Steel
Unefco Mild	Lincoln Spec. Iron
Hot Mill Chilled	Sand Iron
Regular Chilled	Adamite

~LARGEST ROLL MAKERS IN THE WORLD~

be had only on the same basis, this section of the country obtained most of its steel from a limited number of pre-eminent warehouse establishments. Many of these houses nurtured small accounts and sheltered them in times of financial stress. To estimate liberally, there were not more than a hundred of these south of the Mason and Dixon line. Today one of the steel mills has 1200 "distributors" of steel on its list of customers and prospective customers. The mixed car and the pool car have increased the number of mill customers in the distributive class at least ten or twelvefold.

Eagerness of the mills for every pound of business is undermining an established and orderly system of serving consumers through warehouse distributors and is doing away with the middlemen.

Practices Meet Opposition

Some mills refuse to adopt the new practices. Other excuse their participation on the grounds of self defense. Still other producers have reorganized their production, shipping and sales departments to conform with the requirements of mixed car and pool car shipments. These proponents of direct selling take every advantage of water transportation. Warehouses are placed where the best combinations of rail and barge rates can be obtained. Some of these mills offer their customers not only a complete variety of finished steel, but a wide assortment of fabricated steel products, thus making it easier for the small buyer or group of consumers to assemble a carload order.

Despite the confusion prevailing in the Texas market, the methods cannot be hastily condemned, for from these experiments may be evolved a better and more economical plan of merchandising. Independent warehouses may find it possible to adjust themselves to the changing conditions, and in the future they still may be a strong link in the chain of distribution. The mill warehouses have yet to justify themselves economically. Policies of distributing steel from mill to consumer are likely to stand or fall on the conclusions reached in Texas.

Powerful Milling Machine Speeds Billet Chipping

(*Concluded from Page* 57)

a single handle, so located that the operator has a clear view of the work. The only manual operation is the lateral movement of the cutter head by means of the pilot wheel. As a result, the operator can spot the cutter, either for a single cut, or a series, at any desired point on the billet, and can also regulate the depth of cut exactly according to circumstances. Since there is no necessity for reversal after every short cut, there is a considerable saving in time, especially in removing diagonal or transverse flaws. In removing longitudinal flaws, the carriage is moved with the cutter stationary, giving a planer action.

Another novel feature of the machine worthy of mention is the series of conveying rolls which by the movement of a lever draws the billet into the automatic chuck after which it is manipulated from side to side by the air lever. When the billet is completed the rolls carry it on through the machine, thereby eliminating any possible lost motion between billets.

Set Refractories Meeting

The American Refractories institute announces that the fall meeting of the organization will be held at the Traymore hotel, Atlantic City, N. J., Oct. 24. Dorothy A. Texter, 2218 Oliver building, Pittsburgh, is secretary of the institute.

Steel Treaters Add Papers to Technical Program

Several technical papers have been added to the program for the annual convention of the American Society for Steel Treating to be held at the Stevens hotel, Chicago, Sept. 22-26, during the National Metal congress. Edgar C. Bain, research laboratory, United States Steel Corp., Kearny, N. J., will discuss the nature of chrome-nickel corrosion-resisting steels in a paper which he wrote with the assistance of Robert H. Aborn. This paper will be a feature of the session on stainless steels on Thursday morning, Sept. 25.

C. H. Bierbaum, vice president and construction engineer, Lumen Bearing Co., Buffalo, is on the program to describe a new micro hardness tester which he uses to show comparative hardness of the microconstituents of metals. As a part of the session on melting on the afternoon of Sept. 25, H. H. Ashdown, consulting metallurgist, Irvine, Pa., will discuss the various types of steel ingots and the effect of mold design upon steel.

Practically all available exhibition space in the National Metal exposition has been sold and over 175 exhibitors will be represented. Nearly 85,000 square feet of space in the Stevens will be occupied.

Lists Refractories Brands in Revised Directory

The American Refractories Institute has published the eighth edition of its "Brands of Refractories," a 70-page booklet listing the brands of fire brick and other refractories manufactured in the United States and Canada as well as every known manufacturer of these products. The booklet is divided into four principal divisions; the first giving the brand names of fire brick, the second giving brand names of high-temperature bonding mortars and plastic materials, the third assembling American and Canadian manufacturers in alphabetical order, and the fourth showing the geographic location of refractories manufacturers.

This directory should prove valuable for reference by the many users of refractories, especially purchasing agents, metallurgists and engineers in the industries who deal with high temperatures in their plant production and operation. Copies of the booklet are obtainable from the office of the secretary, 2218 Oliver building, Pittsburgh, for 25 cents each.

Steel producers are establishing warehouses in Texas. This new warehouse of the United States Steel Corp. at Houston is ten times as large as the city's auditorium where the Democratic convention was held

Densite

.42 Carbon
DENSITE STEEL

.46 Carbon
ORDINARY STEEL

DENSITE FORGINGS ARE BETTER FORGINGS

IT REQUIRED 4,500,000 MORE FOOT POUNDS TO BREAK THE DENSITE AXLE THAN THE ORDINARY STEEL AXLE

(Axles and standard test courtesy of Pittsburgh Forge & Iron Co.)

DENSITE REFINED STEELS

are obtainable from your *REGULAR* source of supply. Write "DENSITE REFINED" into your specifications.

REFINED STEEL PRODUCTS CO.

CLARK BLDG.
PITTSBURGH, PA.

Scanning the Technology of Steel

A Digest of Important Developments in Scientific Research, Engineering Progress and Operating Procedure Pertaining to the Production, Processing, Application and Performance of Steel

USES:

Bearing Metals and Bearings

Historical development of bearings and metals; tests, designs and lubrication of bearings, by W. M. Corse in Transactions of the American Society for Steel Treating, August 1930, *p.* 179, 25 *pp.*

A brief historical survey is given, tracing the development of bearings and bearing metals. This is followed by a discussion of the requirements of a good bearing metal and a description of the properties of white metals, bronzes and graphite bearing metals. The utility of tests most commonly applied to bearing metals is discussed and a summary given of some recent important work on bearing bronzes at the bureau of standards.

The author takes up the various factors to be considered in the design of bearings and the causes of failure. A brief nonmathematical resume is given of the theory of lubrication, both for thick and thin lubricant films referring to recent research work in this field. The effects of various physical and chemical properties of the lubricant are discussed and further fundamental research recommended.

—STEEL 8-14-30

Aluminum Alloys

Aluminum alloy forgings and castings applied to aircraft parts, by Douglas B. Hobbs, in Aviation, August 1930, *p.* 99, 1½ *pp.*, 2 *tables.*

Alloys of aluminum may be divided into two classes—the wrought alloys and the cast alloys. The first group may be fabricated into sheet, plate, foil, bar, rod, wire, seamless tubing and pipe, molding, structural shapes both extruded and rolled, rivets, stampings and forgings; while the second type may be cast either in sand, dies or permanent molds. The majority of wrought aluminum products for aircraft is produced from the duralumin-type alloys commonly referred to as "dural." Tables are presented showing the physical properties of the principal duralumin-type alloys three of which are especially adapted to use in forgings. Airplane parts of aluminum alloys include crank cases, nose pieces, pistons, link rods, connecting rods, a wide range of other engine parts, propellers and fittings for wings and fuselage. The use of forgings supplies an added factor of safety and a reduction in weight over the use of castings for the same parts. Internal inspection of aluminum alloy forgings and castings is accomplished by means of X-ray equipment.

—STEEL 8-14-30

Aluminum Construction

Consideration of use of aluminum for interior hardware piping, etc. in the Aluminum Research Laboratories, New Kensington, Pa., by Junius D. Edwards, in Chemical & Metallurgical Engineering, July 1930, *p.* 428, 2 *pp.*, 2 *illusts.*

This article deals with the use of aluminum in the working facilities within this new laboratory building, rather than with exterior trim and structural members. Among the aluminum hardware details mentioned are : Locks, door knobs, escutcheon plates, hinges and door checks—these being finished in an oxide gray which does not discolor with handling. Lighting fixtures, electrical outlets, chairs and many other office and laboratory accessories are of aluminum. Some articles have polished finish while others are coated with baked aluminum enamel.

Of major interest from an industrial point of view is the use of aluminum water pipe, aluminum steam radiators and aluminum chemical apparatus. It is pointed out that aluminum has proved to be particularly desirable in storing and distributing distilled water. Contamination by aluminum to the extent of only one part in 100 million is indicated. The radiators consist of flat spirals of aluminum tubing attached to aluminum fins which form vertical flues. These radiators are found to give almost instant heating when steam is turned on, and also permit close regulation.

Other things taken up in the article are: The use of aluminum steam jacketed kettles, drying trays, acid storage tanks, and rubber molds. Effective applications of aluminum paint are also cited.

—STEEL 8-14-30

FABRICATION:

Arc-Welded Joints

Design and uses of different combinations of joints which can be welded economically, by Nathaniel Warshaw, in Welding, July 1930, *p.* 591, 5 *pp.*, 44 *illusts.*

Bridges, structural steel buildings, automobiles, overhead cranes, pressure vessels of all description, material handling and storage equipment, and many other articles have been successfully fabricated by welding. This article illustrates graphically many different combinations of joints and structures which can be built up of ordinary structural steel shapes. Steel angles, standard structural channels, plates, and ordinary flat bars can be well adapted to a variety of uses. The designers must guard against the specification of joints which are not inherently strong.

—STEEL 8-14-30

Arc Welding

New production uses for the electric arc welder, in Electrical Production, August 1930, *p.* 2, 5 *pp.*, 4 *illusts.*

This article gives no details as to welding methods, but points out fields in which arc welding can be employed to advantage. Merits of the process over other fabricating processes are enumerated. Among industries listed as using welding are: Building construction, dairy, oil refining, heating and ventilating, automobile, steam and electric railways, shipbuilding.

—STEEL 8-14-30

Machining Steel Drums

The technique of machining seamless forged steel drums for high-pressure work, by John E. Strachan

in Mechanical Engineering, August 1930, *p.* 751, 6 *pp.*, 18 *illusts.*

When American engineers designed boilers for high-pressure steam—1400 pounds per square inch—they adhered to the drum type, but found it necessary to increase the thickness of the shell to a point where riveted plates could no longer be used. The article describes the processes involved in the manufacture of a forged boiler drum having an outside diameter of 60 inches, an inside diameter of 51 inches, a total length of 41 feet 9 inches, and a weight of 106,920 pounds. The drum was hollow forged from an octagonal steel ingot 82 inches in diameter, 164 inches long and weighing 301,000 pounds. The various steps in forging, boring, turning and closing the ends of the drum are outlined in detail.

—STEEL 8-14-30

Metals and Welding

Survey of a number of commercial metals and alloys, and their weldability, a paper by W. B. Miller, presented at the December, 1929, *meeting of the New York section of the American Welding society, Journal of the American Welding society, July* 1930, *p.* 98, 7 *pp.*, 3 *tables.*

Metals are classified into single metals, nonferrous alloys and ferrous alloys. Two tables classify the metals according to trade names. In regard to welding the metals and alloys the author finds that in spite of the high temperature of the oxyacetylene flame, it may be used for uniting metals with low melting points. The operation is chiefly one of choosing the proper sized flame, a little study and practice on the part of the operator being required for each alloy or class. A few instances have been found of alloys which are almost impossible to repair or join by welding, the most notable being the die cast alloys of aluminum, tin and zinc in various combinations.

—STEEL 8-14-30

PRODUCTION:

Electric Furnaces

A user's viewpoint of the advantages accruing from the operation of an electric arc furnace in the steel foundry, by Frederick A. Melmoth, in Electrical World, July 19, 1930, *p.* 128, 2½ *pp.*, 2 *illusts.*

The future of the electric furnace in steel melting work appears to be intimately tied up to two matters—the supply of inexpensive electric current, and the development of high-temperature refractories. The author describes the operation of a 1½-ton electric furnace for melting plain carbon and alloy steels for small castings in the plant of the Detroit Steel Casting Co., Detroit. Simplified control, speed of melting, regularity of product and an ample available superheat are points found to specially adapt the electric furnace for steel casting production. The fact that intermittent working of the furnace was necessitated by foundry requirements, limited the performance standard of the furnace.

—STEEL 8-14-30

Induction Furnaces

Operating characteristics of coreless induction furnaces, by A. G. Robiette, in Metallurgia, July 1930, *p.* 105, 4 *pp.*, 4 *illusts.*

Electrical features of the design and operation of a 1-ton coreless induction furnace are outlined. Current is supplied by a 650 kilovolt-ampere motor-generator unit and consumption compares favorably with current requirements of the electric arc furnace. A fritting process for forming large basic-lined crucibles for the coreless induction process furnace has materially aided the furnace development, as high as 60 heats being obtained in the new type crucibles, contrasted with a maximum of about 18 from the old type of plumbago crucibles. The rapid circulatory motion of the metal in the induction furnace is said to produce a cleaner steel and a quicker refinement. Expensive alloys steels can be cooled in the coreless induction furnace after refinement and by cutting the current off in steps from the inductor coil which surrounds the crucible, the resulting ingot requires a minimum of cropping. Large grain structure is avoided by jolting the furnace during the crystallization period.

—STEEL 8-14-30

Permanent Mold Castings

Description of a process for mass production of castings in permanent molds, in Mechanical Engineering, August 1930, *p.* 775, 2 *pp.*, 5 *illusts.*

Production of castings in permanent molds of cast iron has made it possible to do away with many costly and time-consuming operations in the foundry. The article describes the Holley-type machine for making castings of this type. It is arranged with 12 molds on a turntable, 12 castings being produced with each revolution of the table. The time required for one revolution depends upon the size of the casting and ranges from 1½ to 4 minutes. Several small castings may be made in a single mold, thus increasing the capacity of the machine. Photomicrographs are included showing the structure of iron cast in this type of permanent-mold machine. Radiators for domestic heating purposes and cast iron soil pipe are two illustrations of the wide range of products which can be cast in this manner.

—STEEL 8-14-30

MISCELLANEOUS:

Factory Lighting

Discussion of relation between illumination and production, in Electrical Production, August 1930, *p.* 7, 3 *pp.*, 3 *illusts.*

Illuminating engineers estimate that 87 per cent of all factories are in the "twilight zone"—the deceptive half light between obvious darkness and good illumination. Speeding up of production is the obvious result of improved lighting. Curves accompanying the article show the relation between lighting and production, the relation between daylight illumination and accidents, and the relation between light intensity and speed of reading.

Following a brief disposition of the principles of illumination, the article recites numerous examples of increased production and efficiency obtained by manufacturing plants through installation of modern lighting equipment.

—STEEL 8-14-30

Railway Car Dumpers

Methods of dumping end-tipping cars, by H. Pfennig, in Engineering Progress, July 1930, *p.* 179, 5 *pp.*, 15 *illusts.*

In numerous modern handling plants, the material is brought up in railway cars. The emptying of these cars, therefore, constitutes the start of the entire conveying process, which is then continued by a suitable combination of conveying means chosen according to the task on hand. The car dumpers described are of European construction, designed by a company which has been engaged in the design and construction of such equipment for over 30 years. The equipment is adapted to all types of conditions including natural topography and requirements of the conveying system. All descriptions are concerned only with railroad cars of the end-tipping type.

—STEEL 8-14-30

New Books Worth Reading

SCIENCE ECONOMICS BUSINESS

Welding Data Organized

Weld Design and Production, by Robert E. Kinkead; cloth, 108 pages, 5¾ x 8½ inches; published by Ronald Press Co., New York, and supplied by STEEL, Cleveland, for $4, plus 15 cents postage; in Europe by Penton Publishing Co. Ltd., Caxton House, London, for 20s, postage extra.

Lack of organized data on welding, though a great deal has been developed, led the author to undertake this work. It was his aim not only to collect these data but to collate them and organize the fundamentals of welding. The book is designed primarily for engineers responsible for satisfactory and safe welds and executives responsible for cost elements of welding jobs.

Safety in welded structures, the all-important factor, is covered in discussion of welding procedure control. In this discussion the way is shown to eliminate probability of weld failures. Welds need no longer be uncertain and unsafe, the author claims, for the probability of failure can be brought to zero. In the many more possible applications of welding, not now used, the weld should be designed for the job and carried on with sufficient precision to assure uniform results.

A chapter is devoted to the reasons for welding, one to how welds are made and others to effects of physical conditions on weld behavior, actual welding conditions, welding procedure control, machine welding and research and development. Numerous illustrations include charts, photomicrographs and diagrams. The text is fully indexed to facilitate reference.

◆

Mechanical Engineering Handbook Is Revised

Mechanical Engineers' Handbook, by Lionel S. Marks; leather, 2264 pages, 4½ x 7 inches; published by McGraw-Hill Book Co. Inc., New York, and supplied by STEEL, Cleveland. for $7, plus 15 cents postage; in Europe by Penton Publishing Co. Ltd., Caxton House, London, for 35s, postage extra.

After six years the third edition of this handbook is issued, the interval witnessing a tremendous growth in the field of the mechanical engineer, both in practice and in knowledge of fundamental principles. This has necessitated great changes in the text. A section has been added on vibration. Standard and practice have been brought up to 1930; physical data have been revised to incorporate best current values and developments in special fields, such as welding, have brought enlarged discussion. Subdivision of the larger fields into smaller sections continues as differentiation and specialization develop.

The text is the result of the efforts of more than 70 specialists, each eminent in his field. This is an increase over contributors to previous issues.

◆

How World Business Stood at Opening of 1930

World Economic Conditions at Beginning of 1930; cloth, 188 pages, 6 x 9 inches; published by National Industrial Conference board, New York, and supplied by STEEL, Cleveland, for $2.50, plus 15 cents postage; in Europe by Penton Publishing Co. Ltd., Caxton House, London, for 12s 6d, postage extra.

The fourth in a series published semiannually, this volume presents through the eyes of foreign correspondents of the board a view of world conditions at the beginning of the present year.

Part I departs from former procedure in presenting the annual report of the president of the international chamber of commerce, covering world economic conditions in 1929, instead of the board's own review. This is followed by a review of economic conditions as seen by the board.

Part II contains, as usual, a series of original articles by foreign representatives, in which they state their views on significant economic developments and problems.

◆

Lake Superior Iron Ore Facts Brought Up to Date

The Iron Ores of Lake Superior, seventh edition, by Crowell & Murray Inc.; cloth, 340 pages, 6 x 9 inches; published by Crowell & Murray Inc., Cleveland, and supplied by STEEL for $6 plus 15 cents postage; in Europe by the Penton Publishing Co. Ltd., Caxton House, London for 30s, postage extra.

Since 1911 when the first edition appeared this book has been one of the standard reference works on the iron ores of Lake Superior, and each succeeding edition has been enlarged and improved until today it is the most comprehensive on the subject. It deals with the early history of the ranges, the geology, mineralogy, exploration and estimating iron ore; classification and sampling, methods of analysis, valuations, equipment for handling the ore; mining practice, beneficiating methods, descriptions of the mines and ores by districts, with maps and charts, and statistics of the industry.

Special Articles Offered

Among the special articles in this edition are "Iron Ore Reserves of the Lake Superior District," by M. C. Lake, geologist for the M. A. Hanna Co., ore producer; "Economics of Iron Ore Beneficiation," by C. P. McCormack, and "Manganese," by Carl Zapffe. Mr. Lake says the known reserves will last for 28 years on the basis of the average yearly consumption of iron ore of the United States during the past nine years. The projected curve of consumption, however, indicates there will be an increase during the next ten years and on this basis the known reserves of Lake Superior ores will be sufficient for approximately 23 years. He expects that some additional reserves will be discovered.

The great bulk of the lean ores of the district are not magnetic, as popularly supposed, but consist primarily of a mixture of banded hematitic iron oxide and ferruginous chert. The two are so intitmately mixed that their separation will require very fine grinding, and the separation in finely divided form is diffcult. "No known process has yet been developed which will beneficiate these ores successfully," he says. Various groups and institutions are trying to work out a method.

Members of the Schenectady, N. Y., chapter of the American Society for Steel Treating recently elected the following officers for 1930-31: Chairman, G. R. Brophy, General Electric Co.; vice chairman, N. A. V. Paulson, Ludlum Steel Co.; and secretary-treasurer, F. C. Kelley, General Electric Co.

Machine Tools and Shop Equipment

"Without machine tools modern machinery could not be built."

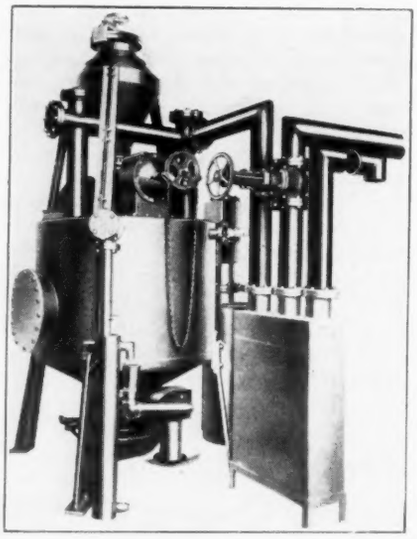
—Joseph W. Roe

Acetylene Generators Give Large Volumes of Gas

Oxweld Acetylene Co., New York, has developed two improved types of nonautomatic stationary acetylene generators for supplying large volumes of acetylene. The generators are each made in two sizes having 500 and 1000-pound carbide capacity. They are designed for large industrial plants where welding and cutting are used extensively and where oxygen and acetylene are piped to stations convenient to operators.

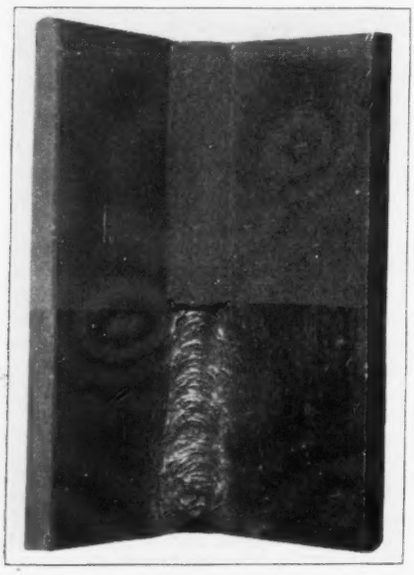
The generator shown in the accompanying illustration is for plants using low-pressure welding and cutting apparatus and delivers to a storage holder which is weighted to supply acetylene to the shop piping system at a pressure of 20-inch water column.

The other generator is similar, with the addition of an automatic booster system to deliver acetylene to the shop piping system at pressures not to exceed the permissible limit of 15 pounds per square inch. The booster system consists of a booster pump, pressure regulating by-pass valve, pulsation tank, mercury seal, hydraulic back pressure valve, electric motor for driving the booster, and power transmission equipment.



This acetylene generator is suitable for large industrial plants

In operation, the carbide is conveyed from the hopper to the generating chamber by a rotary feed screw driven by a slow speed reciprocating water motor. From the generator the gas enters the wash box where it passes through a water seal which acts as a scrubber to remove any particles of residue which might have been carried over. When residue is being drawn off from the generator the wash box acts as a vacuum release and permits a reverse flow of gas which allows acetylene to return from the holder to the generating chamber to displace the drained water.



Fillet putty gives neat "finishing touch" to welded work

◆

Welds Are Smoothed Over by Fillet Putty

Fusion Welding Corp., Chicago, offers to the welding industry a fillet putty for use in covering weld beads to give them a smooth, finished appearance. The material comes in powder form and is mixed with water to the desired consistency, varying from a paste to be applied with a putty knife to a wash for brush application. A short time after its application this material becomes substantially as hard as iron, according to the manufacturer, who points out it essentially is iron. It is said to adhere tenaciously and does not loosen from shock or vibration. The accompanying illustration indicates how this material improves the appearance of welded structures.

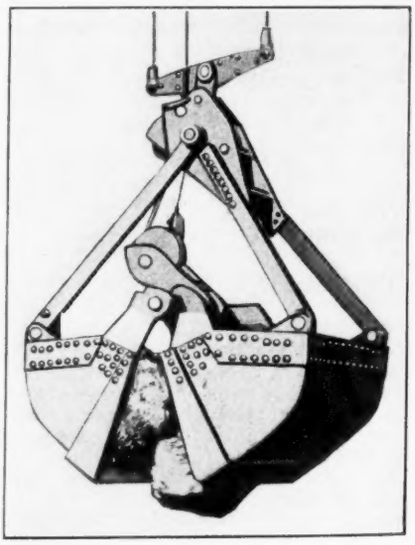
◆

Heavy-Duty Bucket for Steel Mill Service

Erie Steel Construction Co., Erie, Pa., announces a heavy-duty clamshell bucket, which is shown in the accompanying illustration. This is similar to their other types of lever arm buckets, but is extra rugged in construction to meet severe service in steel mills and industrial plants.

The bucket is all steel construction and the sheaves are at the extreme end of the power arm in order to exert the greatest amount of leverage. By eliminating S bends, it is claimed that cable life has been increased as much as 50 per cent. The operating mechanism can be reeved with three, four or five parts of closing line. The bucket is a powerful digger as well as speedy in opration.

The head of the bucket is rigid



Rugged bucket is built to "stand the gaff" of steel mill service

Your chance to see this improved straightener in operation

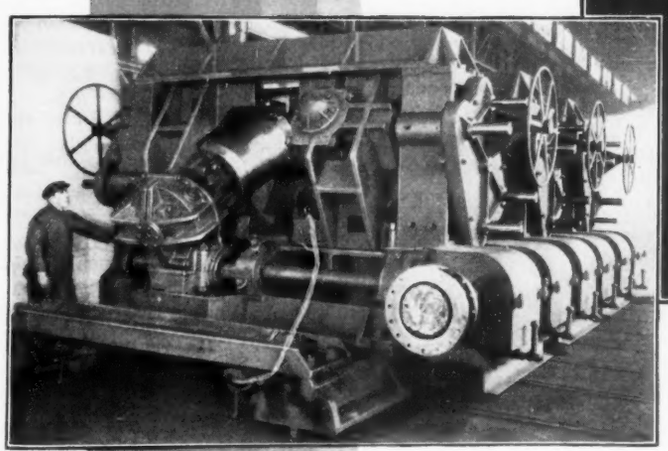
— right in your own plant

IF you are considering the purchase of straightening equipment, ask for an actual working demonstration of the Treadwell Straightening Machine (Abramsen design) — in your own plant.

We will send this smallest model — weighing only 19 lbs., but incorporating every feature of the model which straightens tubes 28" dia.—to your office for an actual working demonstration.

With the machine before you, you can straighten small tubes and leisurely study all the improved Treadwell features which permit increased straightening capacity and more efficient operation.

When will a demonstration be most convenient for you?



Treadwell Straightening Machines are made in various sizes to straighten tubes from ⅛" to 28" dia. — rounds from ⅛" to 6" — and flats, shapes, etc.

Treadwell Engineering Company
Easton, Pa.

TREADWELL

Rolling Mills—Threading & Cutting-Off Machinery—Special Machinery—Iron & Steel Castings

and has a large bearing and built-in guide rollers. By strengthening the corner bars with the head plate, digging strain is distributed evenly to the four corners. Back bands of the scoops tie in with the power arm, giving three thicknesses of metal at what are ordinarily weak points. The lips are also extended up to tie in with power arm and hinges. Tests have proved that the rugged construction of these buckets make them capable of standing constant contact with iron in cupola refuse pits.

These heavy-duty buckets are available in standard sizes ranging from 2 to 6 cubic yards capacity. Larger sizes can be built to order on short notice. Lips are furnished with high-carbon steel, manganese steel or stellite cutting edges, as desired.

◆

Toggle Drawing Presses Are Redesigned

E. W. Bliss Co., Brooklyn, N. Y., announces improvements in its line of single-crank toggle drawing presses. These changes are in the direction of increased strength, easier accessibility to dies, and better press control.

A gibbed guide on the frame has been substituted for the outboard bar guide previously used. This increases the overload capacity of the presses. Stiffening of the blankholder drive has been accomplished by substituting a forked member for the overhung pins of the short link.

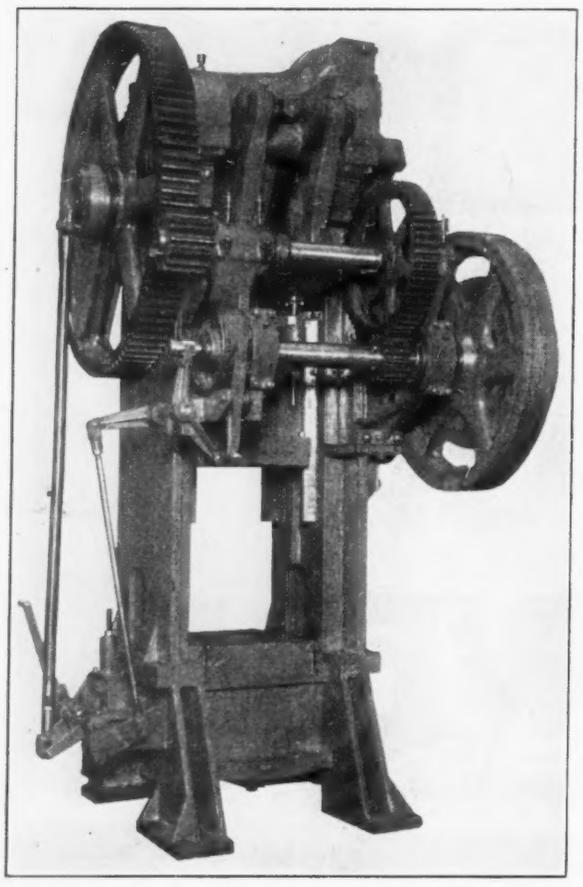
Pilot switch is valuable adjunct to automatic electric control

Easier access has been given to the rear blankholder nuts by raising the driveshaft. A full automatic friction clutch control built into the right leg of the machine permits immediate shifting from hand to foot control without the use of tools or intermediate strips. This allows instant stopping of the press by means of the hand lever in cases when the operator notices—after pressing the foot treadle—that the work has been misplaced in the die.

Details of Design

Drive shaft brackets are heavier and intermediate shafts run in bronze bushings. The main drive shaft is taper roller bearing equipped and carries a new style combined clutch and flywheel. The flywheel which runs free on roller bearings when the press is idle, is provided with a clutch consisting of three steel disks with asbestos facings. The clutch is operated through toggles and a rod through the hollow drive shaft which links it up to the operating shaft and balanced brake on the right hand side of the machine. When driven from a lineshaft the belt runs on the crowned periphery of the clutch rim, and either this clutch rim or the rim of the flywheel may be used for motor drives. The drive is decidedly more compact than in older models.

Frames have been stiffened and extended back to come closer to the back shafts. In all but the small size press, rock shaft bearings are capped at the bottom to keep peak loads away from the caps and the bearing joints. Steel tie rod construction is employed in all but the smaller sizes. Amply proportioned chilled rim spur gears of semisteel are supplied on standard models.



Power and rigidity, unusual accessibility of dies, and convenient and positive control are important characteristics of this improved toggle type drawing press

◆

Pilot Switch Provides an Auxiliary Control

Cutler-Hammer Inc., Twelfth and St. Paul avenue, Milwaukee, has developed a new three-position pilot switch. This device, shown in the accompanying illustration, is for the manual stopping and starting of pumps, compressors, and similar machines automatically controlled by float switch, pressure switch, or time clock.

The three positions allow the lever to be set at "automatic," "off," or "manual" position. The first gives normal automatic operation, the second opens the pilot circuit so the motor cannot be started from any other control point, and the third closes the control circuit so that the

motor operates continuously regardless of any other control devices.

The construction is extremely simple, there being only a two-button push button switch within the case, the buttons of which are operated by a cam on the lever. The lever will remain in any of the three positions.

◆

Portable Power Plant Has 1000 Watts Capacity

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., announces a portable electric power plant driven by a gasoline engine which develops 2 horsepower at 4000 revolutions per minute. The outfit is 35 inches long, weighs 120 pounds and is capable of delivering 1000 watts. The gasoline tank has a capacity of 2½ quarts, this being sufficient to run the engine under full load for 3 hours.

The unit is mounted on duralumin skids which make it easy to transport from place to place on construction and repair work. It provides a convenient source of power for such electrical tools as drills, chisels, saws, etc. Engine speed is controlled by an automatic mechanical governor giving accurate speed adjustments between 1800 and 4000 revolutions per minute.

◆

Small Molded Pulleys Are Ball Bearing Equipped

General Electric Co., Schenectady, N. Y., now has available a line of industrial pulleys made of fabric filled compound molded around plain and ball bearings. The plain bearings are of the sleeve type and the ball bearings are of the single-row, self-contained type, with dust shields. These pulleys are made with outside diameters of 1¼, 2, 2½, and 3½-inches.

Various combinations of pin diameters and bearings can be supplied. For instance, the 1¼-inch pulleys have plain sleeve bearings for 3/16 and ¼-inch pins, or ball bearings for 3/16-inch pins only. The 2-inch line includes plain sleeve bearings for ¼ or ⅜-inch pins, or ball bearings for ¼-inch pins. The 3½-inch line includes either plain ball bearings for ¼ or ⅜-inch pins.

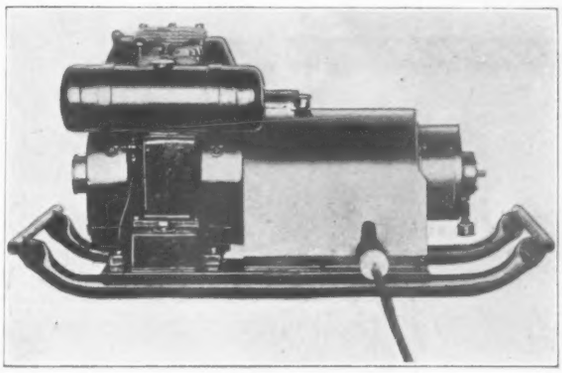
These pulleys are recommended by the manufacturer for use in materials handling equipment, and in elevators, also in railway and marine signal devices and in aircraft control mechanisms.

◆

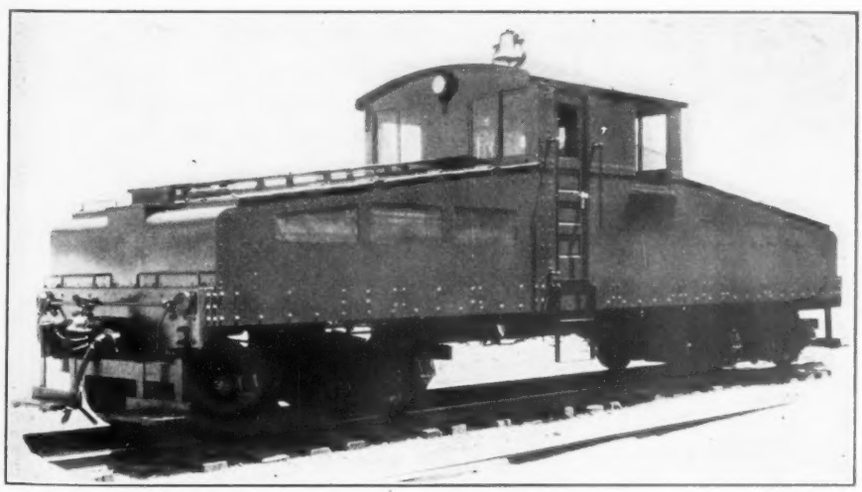
Storage Battery Locomotive Has Generous Power

Atlas Car & Mfg. Co., 1130 Ivanhoe road, Cleveland, O., has added to its line a 50-ton storage battery locomotive. A photograph appears herewith. This locomotive carries 200 cells of battery which furnish current to four motors of 75 horsepower each. Contractor type of control is employed, there being two control stations in the cab. At a speed of 5 miles per hour the locomotive exerts a draw bar pull of 18,000 pounds.

The machine is fitted with air brakes, air whistles, air sanders, auxiliary hand brakes, headlights, bell, standard automatic couplers and other necessary accessories.



Portable gasoline-electric power plant generates dependable and economical current, which enables the advantages of electrical tools to be had on jobs where they could not ordinarily be used



This 50-ton storage battery locomotive can exert a draw bar pull of 18,000 pounds at 5 miles per hour

◆

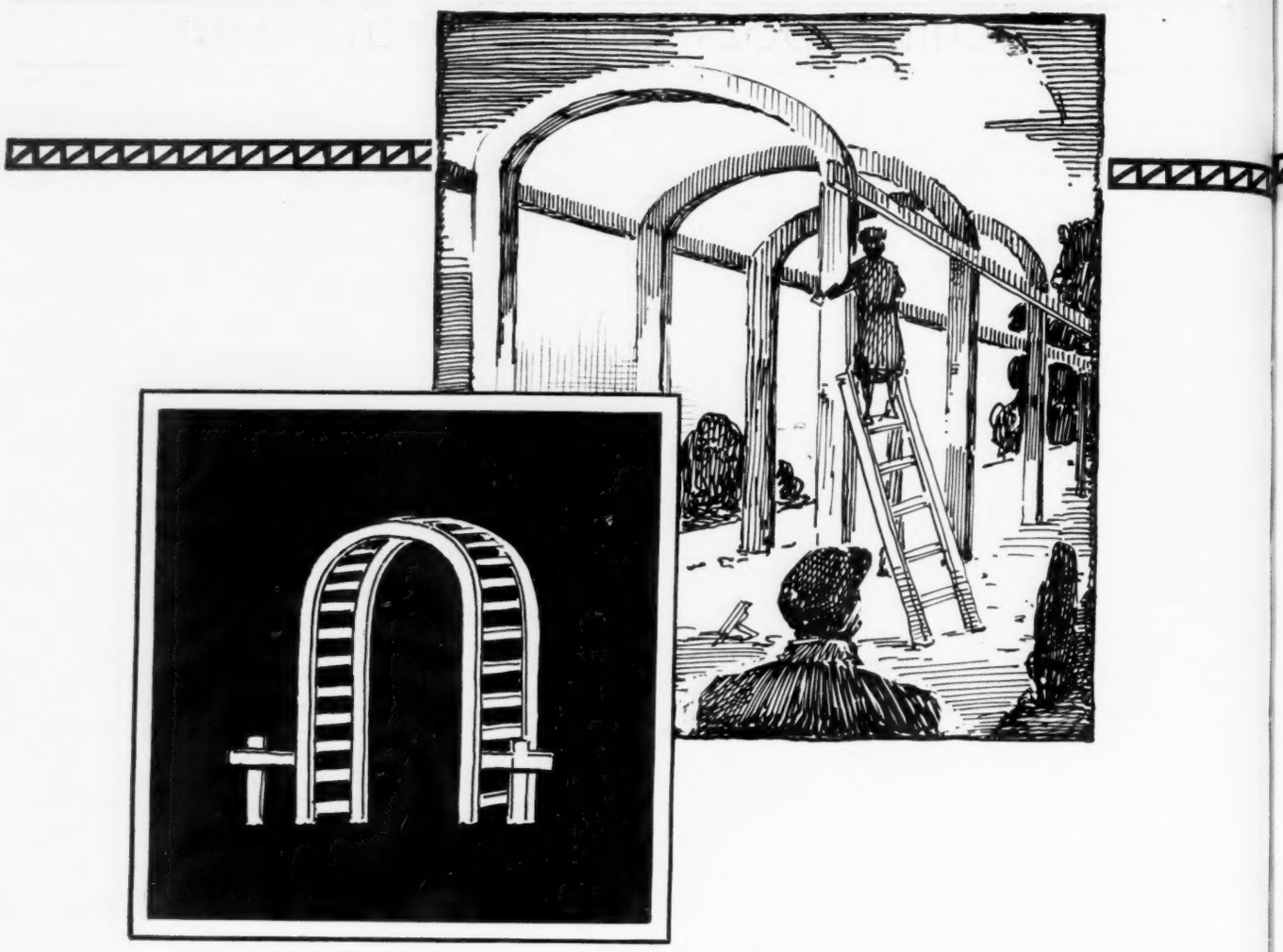
Mixing of Gases Simplified by Ratio Meter Control

Bailey Meter Co., Cleveland, has devised an automatic ratio control for the mixing of gases or liquids in any desired proportion. This control finds many applications in steel mills, oil refineries and process industries where mixtures of fluids must be definitely proportioned in a given ratio to secure best results.

Air and fuel for combustion in industrial furnaces may be proportioned automatically so as to secure maximum fuel economy. A control of this kind can be applied to both liquid and gaseous fuels or to a combination of the two in such a way as to insure the highest combustion efficiency consistent with economical operation. Mixing of two or more gases or liquids to form a low cost fuel can also be accomplished.

In proportioning blast furnace gas to coke oven gas, the meter may be easily applied. The control is operated by hydraulic pressure. Any change in the rate of flow in the coke oven gas line is immediately reflected by the meter connected to that line. The recording mechanism of this meter is connected through a system of linkage to a pilot valve, stabilizer and meter, which meter is in turn connected to the blast furnace gas line.

If the flow of coke oven gas in-



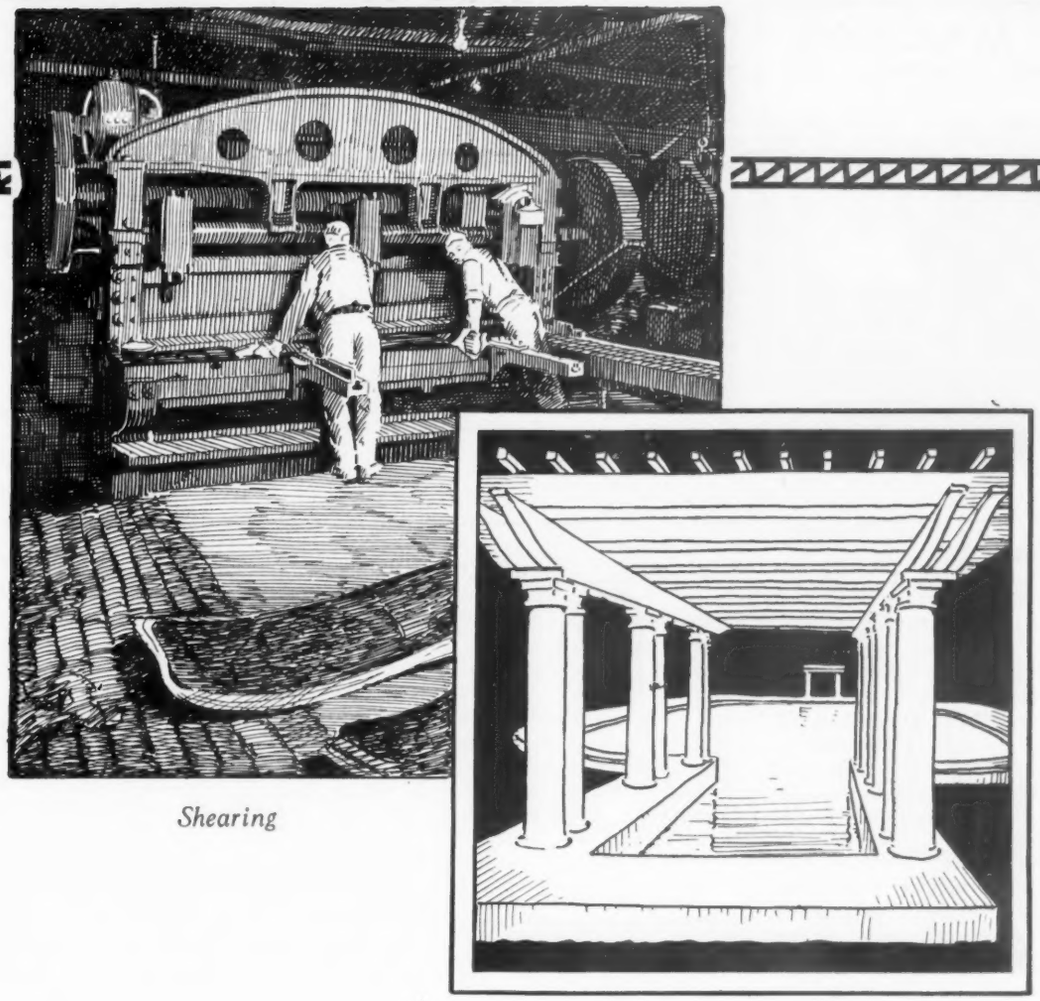
Mark *of* Quality 1430 A. D. Style

History records that the old guilds had much trouble with fraudulent workers and tricksters who were ingenuous in their deceits. They "carved tin so subtly that it could scarcely be distinguished from fine silver" and were equally clever in making artificial jewels, etc. So, to guard consumers by a distinguishing mark of the genuine, the first trade mark recorded in history was granted to the goldsmiths' guild. It consisted of a leopard's head used as an essay mark. Soon other prominent guilds took up the idea and placed distinguishing marks upon their products. History describes more than one old emblem used by the iron workers guilds.

Black Sheets
Automobile Sheets
Metal Furniture Sheets
Ceiling Stock
Locker Stock—Regular and Special
Japanning Stock—Regular and Special
Single Pickled Sheets
Bow Socket Sheets
Milk Can Stock

EMPIRE STEEL SHEETS

EMPIRE



Shearing

yle and the Mark *of* Quality in 1930

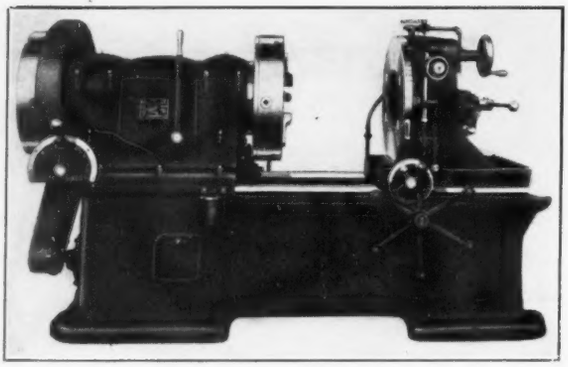
Enameling Stock
Auto License Plate Stock
Nickel Plating Stock
Full Pickled Sheets
Electrical Sheets
Copper Bearing Sheets in all Finishes
"Wabik" Metal — (Special Vitreous Enameling Stock)

The trade mark of Empire Steel serves today as the guide to genuine Empire Steel Sheets of highest quality. Made of raw materials which are the best by test, in modern mills by skilled workmen who are specialists of long years experience, and in accord with the spirit of an organization the guiding ideal of which is old guild quality and craftsmanship—it is no wonder that Empire Steel Sheets have such a reputation for excellence. Let Empire contribute to the betterment of *your* product.

EMPIRE STEEL CORPORATION
Mansfield, Ohio

Sales Offices: New York - Philadelphia - Cleveland - Detroit
Chicago, 520 No. Michigan Ave.—Indianapolis—St. Louis

Steel Sheets



Cutting off and reaming, as well as threading of large pipe is done on a high production basis by new line of machines with built in opening dies

creases, the linkage moves so as to raise the pilot valve, allowing oil pressure to be applied to the "more" side of the power cylinder. At the same time, this movement opens the "less" side of the power cylinder to drain. The stabilizer tends to counteract the impulse given by the coke oven gas meter. This counteracting effect of the stabilizer is secured by connecting the "more" oil line to the upper chamber of the stabilizer and the "less" oil line to the lower chamber of the stabilizer. As pressure is applied to the "more" oil line and the "less" side is open to drain, the stabilizer piston moves downward and tends to return the pilot valve to a neutral position which in turn tends to equalize the pressures on either side of the stabilizer, causing it also to take a neutral position.

Any desired ratio between the two component parts of a mixture can be secured by selecting the proper ratios for the meter orifices. A further adjustment or change of ratio can be had by use of the ratio changing device which is simply a movable pivot supporting the linkage in the right-hand meter casing.

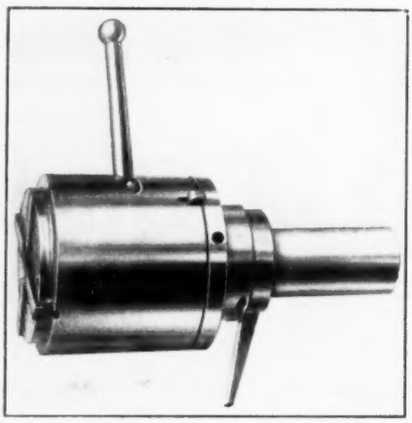
◆

Heavy-Duty Pipe Threader Is a Production Tool

Jarecki Mfg. Co., Erie, Pa., has just put on the market a new line of high-speed pipe threaders built for heavy-duty production work, being of massive construction to insure rigidity. Convenient controls give quick action to the various operating mechanisms.

The machines have six spindle speeds and by means of a speed change dial marked for pipe sizes the operator can instantly select the proper speed for the work in hand. The machine also cuts pipe. A long lever within easy reach of the operator permits immediate changing from any threading speed to the high speed employed for cutting off and reaming operations. A multiple-disk clutch is incorporated into the change gear mechanism. This insures smooth changing, and by being set to slip at the danger point it protects gears, chasers and work against overload. This slipping action is also taken advantage of when screwing up fittings under power in the machine.

The heart of the machine is the improved automatic self-opening die head. A forged steel trigger, or inside trip, automatically throws the chasers open when the correct length of thread has been cut. The



Outside trip die head safely cuts short threads of fine pitch

trigger of the inside trip recedes completely when chasers open, returning again to gaging position when the chasers close. Exact duplication of threads is assured by means of a thread length dial on the die head. The dial is calibrated in 4 inches and for Briggs standard.

Small chasers are used, these being rigidly supported in large die holders in which they are located from three points by one tapered clamp screw. Chasers are quickly set to exact cutting diameter by means of a handwheel on the die head. This revolves a cam plate which is plainly marked for each standard pipe size within the range of the machine. Chasers are changed only when thread pitch is changed, and it is never necessary to change die heads. A gear-driven reversible pump delivers clean cutting oil to the die head at the rate of 4 gallons per minute.

The spindle bearings are 9 inches in diameter and are chain lubricated from an oil reservoir. All gears are cut steel and run in an oil bath. Tapered roller bearings are used throughout. These threaders are built in 4-inch, 6-inch and 8-inch capacities, the latter machine being shown in the accompanying illustration. The 8-inch machine gives an average threading speed of more than 29 feet per minute, and cuts off 8-inch pipe at 100 feet per minute.

◆

Outside Trip Die Head Will Do Unusual Threading

Geometric Tool Co., New Haven, Conn., announces a new line of non-revolving self-opening die heads. These new tools are especially designed for the cutting of short threads and threads of fine pitch in such machines as turret lathes, wherein the work revolves and the dies moves only longitudinally.

A distinguishing feature of this line of dies, as indicated by the illustration, is the outside lever trip. This tripping lever is located at the rear of the die body, and can conveniently be arranged to contact with an adjustable stop, or tripping dog, mounted on the cross slide, frame, or bed of the machine tool in which the die is mounted. The chasers are reset for cutting by a ball end lever.

The outside trip mechanism precludes the possibility of deformed or torn work, for the reason that it relieves frail short threads and those of fine pitch from the dangerous strain imposed by so-called pull off tripping. Furthermore, in a machine capable of accurate chucking of work, the outside trip insures accurate thread lengths on every piece by reason of the fact that the chasers are always thrown open at an exact predetermined point.

The chasers of this new series of die heads are interchangeable with those of corresponding sizes in sleeve trip rotary dies, button-type rotary dies, pull off trip stationary dies and solid adjustable dies made by this concern. It is pointed out that in plants where considerable threading is done, because it makes one set of chasers useful over a wide range of work thereby reducing chaser inventory to the lowest terms. The new die heads are stocked in eight sizes, handling work from ⅛ to 5 inches.

Would Price Rise Improve Market?

Mixed Sentiment on Possible September Advance—Shape Awards Continue Heavy — Auto Needs Still Disappoint—Operations Off

AS STEEL producers drift past the middle of the third quarter with demand and production no better than at the beginning, the matter of price commands more serious consideration. For even the low cost producers, present levels are scarcely remunerative, and frequent roll changing required by attentuated orders aggravates the situation.

There is some speculation whether an advance in bars, plates and shapes, timed to coincide with the seasonal upturn usually developing early in September, would stimulate buying as well as prove a corrective for earnings. Some factors, not convinced that current prices represent actual bottom, fear a reaction from such a procedure. Nevertheless, an effort to stiffen the market next month is a possibility.

Nothing within the present vision of the steel industry indicates improvement of the colorless market. In fact, such adverse factors as drought, a sluggish retail market for automobiles, surplus railroad equipment and declining foreign trade are perhaps more accentuated.

Fear of drought damage is most pronounced at Chicago, wire and tin plate being the most exposed products. Farm implement manufacturers, faced with a narrowing domestic market, have a partial offset in new Russian orders.

Although back to their mid-July rates, automobile manufacturers and parts makers are operating with a minimum of material, it being estimated there is not a 15-day supply of steel in all Detroit. A few releases against old orders are being received, but many producers dependent upon automotive business are idle or practically so. There is now fear that retail sales will suffer severely this fall from the drought.

Structural steel requirements continue encouraging, but they are running about 15 per cent behind 1929 and thus cannot neutralize losses from other principal consumers of steel. New York has had a brisk week, 12,000 tons being placed for a Lehigh Valley railroad warehouse, 4300 tons for approaches to the Hudson river bridge and 4000 tons for an office building. Inquiry is large and active, low prices tempting builders. This week's structural awards total 38,000 tons, compared with 34,432 tons a week ago.

Interest of railroads in equipment is negligible. The Elgin, Joliet & Eastern will build 300 flats and 250 gondolas in its own shops. Other orders included 110 car underframes and five locomotives. Neither the Pennsylvania nor the Reading is likely to be in the rail market soon, while the Great Northern is deferring action on 9000 tons for an extension. Chesapeake & Ohio has issued releases on its 59,000 tons.

Sheet and strip prices appear less stable. On galvanized, 3.10c, Pittsburgh, is more representative though not the bottom, while at Chicago the market is down $1, to 3.15c, mill. On black sheets 2.45c, Pittsburgh, is more frequently encountered. Cold-rolled strip is being shaded below 2.45c, Pittsburgh-Cleveland. Nails are more frequently $2.05, Pittsburgh, to carload buyers. Pig iron and coke prices are not firm, with some gain in shipments of iron. Scrap is a shade firmer.

All of the improvement in steel ingot production since the bottom of the 1929 slide was reached in December was washed out in July, when the daily rate declined to 112,823 tons, the lowest since September, 1924. July was a 56 per cent operating month, and the total for seven months—26,726,598 tons—stamps 1930 to date as a 73 per cent year, contrasted with 95 a year ago.

Steelmaking operations, at 55-60 per cent last week, are this week just below 55. An important eastern independent is operating slightly heavier this week. Steel corporation subsidiaries are at 62 per cent; last week they were at 64. Pittsburgh and Chicago are at 55 per cent, Birmingham 60, Buffalo 59, Cleveland 48, Youngstown 55-60.

Further weakness in sheets and nails has lowered the market composite of STEEL 8 cents, to $33, compared with an average of $33.21 for July.

Composite Market Averages

Based on Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe.

This week (Aug. 13, 1930)	**$33.00**
Last week (Aug. 6, 1930)	**33.08**
One month ago (July, 1930)	**33.21**
Three months ago (May, 1930)	**33.73**
One year ago (Aug. 1929)	**36.54**
Ten years ago (Aug. 1920)	**68.87**

Comparative Prices of Iron, Steel and Coke

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	Aug. 13, 1930	July, 1930	May, 1930	Aug., 1929
PIG IRON				
Bessemer, del, Pittsburgh	$20.26	20.46	20.76	20.76
Basic, valley	18.00	18.20	18.50	18.50
Basic, eastern del. eastern Pa.	18.25	18.00	18.75	19.85
No. 2 foundry, del. Pittsburgh	19.76	19.76	19.76	19.76
No. 2 foundry, Chicago	17.50	17.90	19.00	20.00
*Southern No. 2, Birmingham	14.00	14.00	14.00	14.00
**No. 2X, Virginia Furnace	18.25	18.25	18.25	20.00
**No. 2X, Eastern del. Phila.	19.76	20.26	20.26	22.26
Malleable, valley	18.50	18.70	19.00	19.00
Malleable, Chicago	17.50	17.90	19.00	20.00
Lake Superior, charcoal, del. Chi.	27.04	27.04	27.04	27.04
Gray forge, del. Pittsburgh	18.63	18.83	19.13	19.13
Ferromanganese, del. Pittsburgh	103.79	103.79	103.79	109.79
COKE				
Connellsville furnace, ovens	2.50	2.50	2.55	2.75
Connellsville foundry, ovens	3.50	3.50	3.50	3.75
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngs.	31.00	31.00	32.20	35.00
*Sheet, bars, open-hearts, Pitts.	31.00	31.00	32.20	35.00
Billets, open-hearth, Pittsburgh	31.00	31.00	32.20	35.00
Wire rods, Pittsburgh	36.00	36.00	36.40	42.00

*1.75 to 2.25 silicon. For local delivery. Northern shipments based on $12 to $13, Birmingham. **2.25 to 2.75 silicon.

	Aug. 13, 1930	July, 1930	May, 1930	Aug., 1929
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.65	1.70	1.75	1.95
Steel bars, Chicago	1.75	1.80	1.85	2.05
Steel bars, Philadelphia	1.94	1.94	2.04	2.27
Iron bars, Chicago	1.75	1.90	1.90	2.05
Shapes, Pittsburgh	1.65	1.65	1.75	1.95
Shapes, Philadelphia	1.66½	1.67	1.77	2.06
Shapes, Chicago	1.75	1.75	1.85	2.05
Tank plates, Pittsburgh	1.65	1.65	1.75	1.95
Tank plates, Philadelphia	1.85½	1.86	1.91	2.15
Tank plates, Chicago	1.75	1.75	1.85	2.05
Sheets, blue anl., No. 13, Pitts.	2.15	2.15	2.15	2.20
Sheets, black, No. 24, Pitts.	2.45	2.55	2.55	2.85
Sheets, gal., No. 24, Pittsburgh	3.10	3.15	3.25	3.55
Sheets, black, No. 24, Chicago	2.60	2.70	2.70	3.10
Sheets, blue anl., No. 13, Chicago	2.30	2.30	2.35	2.50
Sheets, galvanized, No. 24, Chi.	3.20	3.35	3.35	3.80
Plain wire, Pittsburgh	2.30	2.30	2.35	2.50
Wire nails, Pittsburgh	2.00	2.10	2.15	2.60
Tin plate, per base box, Pitts.	5.25	5.25	5.25	5.35
SCRAP				
Heavy melting steel, Pitts.	15.00	14.90	15.40	18.90
Heavy melting steel, eastern Pa.	12.50	12.50	13.38	16.75
Heavy melting steel, Chicago	12.00	12.00	12.55	15.05
No. 1 wrought, eastern Pa.	14.25	14.25	15.38	16.25
No. 1 wrought, Chicago	11.25	11.25	12.70	15.40
Rails for rolling, Chicago	14.50	14.50	14.85	17.75

Sheets

Reductions at Chicago and Adjustments in East—Automotive Demand Still Trailing

SHEET PRICES, PAGE 83

Pittsburgh — Sheet business is holding its own at a reduced level. Automotive tonnage continues light but radio equipment manufacturers are stepping up production. A fair tonnage is being placed by railroad car builders, mainly for repair work. Most sheet orders call for prompt delivery, in small individual lots. Prices are fairly steady. Black sheets are 2.45c to 2.55c; galvanized 3.10c; blue annealed sheets 2.15c, and light plates 2.00c, with a few reports of 1.95c. Autobody are nominal at 3.60c. Continuous mill sheets are 1.90c to 1.95c for 13-gage, and 1.75c to 1.80c for 10-gage. The latter material is stronger. Operations continue around 50 per cent.

New York—Sheet quotations have undergone minor adjustments. While some galvanized tonnage still is moving at 3.15c and 3.20c, Pittsburgh, the majority of orders now are taken at 3.10c. Black sheets appear to have settled to a firm level of 2.45c, Pittsburgh. Shading of 2.00c and 2.15c quotations on blue annealed has disappeared. Demand is sluggish.

Youngstown, O.—Makers of autobody sheets are disappointed at the slowness of orders and specifications. August promises to be on about the July level of production. Some independent mills have been idle for six weeks. Demand continues limited mainly to the common grades. Common black range from 2.45c to 2.55c, Pittsburgh. Autobody hold at 3.60c, and furniture stock at 3.70c. Blue annealed are 2.00c for Nos. 9 and 10 gage, and 2.15c for No. 13 gage. Galvanized range from 3.10c to 3.20c.

Cleveland—Sheet specifications show minor improvement, due mainly to increases from furniture makers. Buying of automobile sheets continues slow. The local Fisher Body plant operating three days a week is gradually tapering production in completing 1930 Chevrolet bodies and stock. Enameling stock is moving well. Sales generally are for quick delivery. Prices continue 3.60c and 3.70c, Pittsburgh, on autobody and furniture sheets, respectively. Black sheets are 2.45c or less, occasional sales being made at 2.35c.

Chicago—Further concessions of $1 a ton in the base price of galvanized sheets are being made by Chicago producers and the range now is 3.15c to 3.20c, mills, the 3.30c price having disappeared. No. 24 black sheets are quoted at 2.55c, mills, while the wider sizes of blue annealed sheets remain unchanged. Narrow No. 10 blue annealed are 2.00c, mills, while the narrow sizes of No. 13 blue annealed are 2.15c. Production has been increased to 60 to 70 per cent by the addition of ten hot mills that were idle the preceding week. Galvanized sheets for culvert material are moving fairly well.

Philadelphia—Sheet demand is smaller than in the first week of August. Galvanized show a weak tone at 3.05c to 3.10c, Pittsburgh, subject to occasional concessions. Blue annealed continue 2.00c and 2.15c for heavy and light gages, respectively. Common black sheets are 2.45c, but desire for tonnage brings out concessions.

St. Louis—Demand for sheets has improved, with heavier shipments of galvanized to the South and West. Sales of blue annealed also have gained.

Birmingham, Ala.—Sheet mill operations in this district are held down to 50 per cent. Sheets have been rolled on the Gulf States Steel Co.'s new mill, but commercial operations will not start until Sept. 1.

Approximately 10,000 to 12,000 tons of steel is used in this country annually in making twist drills and reamers.

Current Finished Steel Prices

Prices in cents per pound unless otherwise stated

Steel Sheets

SHEET MILL BLACK, NO. 24

Pittsburgh base	2.45c to 2.55c
Detroit, delivered	2.76½c to 2.81½c
Philadelphia, delivered	2.74c
Gary, Indiana Harbor	2.55c
Chicago, delivered	2.60c
Birmingham, base	2.70c
St. Louis, del.	2.97c

TIN MILL BLACK, NO. 28

Pittsburgh, base	2.70c to 2.80c
Gary, base	2.90c to 3.00c

GALVANIZED NO. 24

Pittsburgh, base	3.10c
Philadelphia, delivered	3.29c to 3.39c
Gary Indiana Harbor	3.15c to 3.20c
Chicago, delivered	3.20c to 3.25c
Birmingham base	3.30c
St. Louis, del.	3.62c

BLUE ANNEALED SHEETS NO. 13

Pittsburgh, base	2.15c
Chicago, district mills	2.25c
Chicago, delivered	2.30c
St. Louis, delivered	2.57c
Philadelphia, delivered	2.44c
Birmingham	2.30c

BLUE ANNEALED PLATES, NO. 9-10

Pittsburgh, base	2.00c
Chicago, district mills	2.10c
Chicago, delivered	2.15c
Philadelphia, delivered	2 29c
St. Louis, delivered	2.42c
Birmingham	2.15c

AUTOMOBILE NO. 20

Pittsburgh, base	3.60c
Detroit, delivered	3.86½c

FURNITURE NO. 24

Pittsburgh	3.70c

Tin and Terne Plate

Prices per 100-pound box Pittsburgh

Tin plate, coke base	$5.25
Gary, Ind., base 10 cents higher.	
Long ternes, 24, primes	3.55c to 3.65c

Wire Products

(To Jobbers-Merchant Trade)

F.o.b. Pittsburgh, Cleveland base

(Per 100 pound keg)

Standard wire nails	$2.05 and 2.15
Cement coated nails	2.05 and 2.15
Galvanized nails	4.05 and 4.15

(Per pound)

Polished staples	2.50c and 2.60c
Galvanized staples	2.75c and 2.85c
Barbed wire, gal.	2.70c and 2.80c
Annealed fence wire	2.20c and 2.30c
Galvanized wire	2.65c and 2.75c

Woven wire fencing, retailers, Pittsburgh-Cleveland, net ton $65.

(To Manufacturing Trade)

Plain wire, 6-9 gage	2.30c
Spring wire	3.30c
Wire, delivered Detroit	2.53½c
Nails, delivered Detroit	$2.38½

Joliet, DeKalb, Waukegan, Ill., Anderson, Ind., Chicago, $1 over Pitts.-Cleve.; Duluth and Worcester, Mass., $2 higher; Fairfield, Ala., $3 higher.

Rivets

Struc. c.l., Pitts-Cleve.	2.75c
Struc. c.l., Chicago	2.85c
**7/16-inch and smaller, Pitts.	70, 10 and 5 off
Chi., Cleve.	70 to 70, 10 and 5 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Steel Plates

Pittsburgh, base	1.65c to 1.70c
Philadelphia, del.	1.80½c to 1.85½c
New York, del.	1.88c to 1.93c
Boston, del.	2.05c
Chicago, base	1.75c to 1.80c
Cleveland, delivered	1.78½c to 1.88½c
Lackawanna, N. Y., base	1.80c
Birmingham, base	1.90c
Coatesville, Pa., base	1.75c
Pacific Coast, c.i.f.	2.15c to 2.25c
St. Louis, del.	2.12c
Detroit, del.	1.91½c to 1.96½c

Structural Shapes

Pittsburgh, base	1.65c to 1.70c
Philadelphia, del.	1.66½c to 1.76½c
New York, del.	1.75½c to 1.85½c
Boston, del.	1.88½c to 1.98½c
Chicago, base	1.75c to 1.80c
Cleveland, delivered	1.83½c to 1.88½c
Lackawanna, N. Y.	1.80c
Birmingham, base	1.90c
Pacific Coast, c.i.f.	2.25c
Detroit, del.	1.91½c to 1.96½c

Bars

SOFT STEEL

Pittsburgh, base	1.65c to 1.75c
Chicago, base	1.75c to 1.85c
Birmingham, base	1.90c
Lackawanna, N. Y., base	1.85c
Pacific Coast, c.i.f.	2.35c
Cleve. base, local mills	1.70c to 1.75c
Philadelphia, del	1.94c to 1.99c
New York, delivered	1.98c to 2.08c
Boston, delivered	2.05c to 2.15c
Detroit, del.	1.91½c
Pittsburgh, cold finish	1.80c to 1.90c
Pittsburgh, forg. qual.	1.90c to 2.00c

RAIL, STEEL

Chicago Heights	1.65c
Eastern mills	1.65c to 1.70c

IRON

Chicago, base	1.75c to 1.85c
New York, delivered	1.98c to 2.03c
Philadelphia, delivered	1.94c to 1.99c
Pittsburgh, refined	2.75c to 4.25c

REINFORCING

Pitts., billet cut lengths	1.90c to 2.00c
Stock lengths, mill	1.65c to 1.75c
Chi. billet, over 500 tons	1.85c
30 to 200 tons	2.00c
Under 30 tons	2.45c to 2.85c
Chi., rail steel, over 30 tons	1.50c
Under 30 tons	2.10c to 2.50c
Philadelphia, cut lengths	2.04c to 2.09c

Cold-Finished Steel

Bars, Pitts., Chi., Buff	2.10c
Cleveland	2.00c to 2.10c
Do. delivered, Detroit	2.20c
Shafting (turned, polished)	
Pitts., Buffalo	2.10c
Do. (turn., ground) mill	2.45c to 2.90c

Corrosion, Heat Resist. Alloys

Base, Pittsburgh

18 per cent chrome, 8 per cent nickel

Sheets 35c; plates 31c; bars 28c.

	A	B	C	D
Bars	19c	20.5c	23c	28c
Plates	22c	23.5c	26c	31c
Sheets	26c	27.5c	30c	35c
Hot strip	19c	20.5c	23c	28c
Cold strip	28c	29.5c	32c	37c

Carbon 0.12 and under; no nickel. A has chrome 15% and under, B over 15/18% inc., C over 18/23% inc., D over 23/30%.

Wrought Washers

Carloads, Pitts. dist.	$6.50 to $6.75 off
Carloads, Chicago dist.	6.70 to 6.80 off

Alloys Steel

Hot Rolled—F.o.b. Mills

Alloy Quality Bar Base is 2.65c

S.A.E.	Alloy Diff.	S.A.E.	Alloy Diff.
2000	0.25	1.25-1.75 Ni.	1.05
2100	0.55	5100 .80-1.10	
2300	1.50	Cr.	0.45
2500	2.25	5100 Chr.	
3100	0.55	spring.	0.20
3200	1.35	6100 Bars	1.20
3300	3.80	6100 Spring	0.95
3400	3.20	Chr., Ni., Van.	1.50
4100 .25-.40 Mo.	0.70	Carbon Van.	0.95
4600 .20-.30 Mo.		9250 (flats)	0.25
		9250 (rds., sq.)	0.50

Strip, Hoops, Bands

Hot strip, to 6-in., Pitts.	1.75c
Hot strip 6 1/16 to 24-in., Pitts.	1.65c
Hot strip, bands 6 in. and under, Chicago	1.90c
Do. 6 1/16 to 24 in.	1.80c
Cooperage hoop, Pitts.	1.90c to 2.00c
Do. Chicago	2.00c to 2.10c
Cold rolled strip., Pitts., Cleve., 3 tons, over	2.45c
Worcester, 3 tons, over	2.60c to 2.70c

Rails, Track Material

Standard bess. and open hearth rails, mill	$43.00
Relay rails, Pitts., 60 to 90 lb.	$24.00 to 28.00
Light rails, 25-45, mills	$34.00
Angle bars, Chi. base	2.75c
Spikes, railroad, mills	2.80c
Spikes, railroad, 7/16-in. and smaller, Pitts.	2.80c
Spikes boat, barge, Pitts.	3.00c
Spikes, railroad, Chi.	2.80c
Track bolts, Pitts., steam roads	3.80c
Do. standard, jobbers	73 off list
Track bolts, Chicago	3.80c
Tie plates, mills	$41.50

Bolts and Nuts

Pittsburgh, Cleveland, Birmingham and Chicago

Discounts to legitimate jobbing or large consuming trade for full-case lots apply to May 10, 1930 lists.

CARRIAGE BOLTS

All sizes, cut thread	73 off

Rolled thread ⅜ x 6 and smaller take 10 per cent lower list.

Eagle list	73 off

MACHINE BOLTS

All sizes cut thread, lag screws, plow bolts, Nos. 1-2-3-7 heads, tap bolts, blank bolts, stud bolts without nuts	73 off
Tire bolts	60, 10 and 10 off
Stove bolts, 80, 10, 10, 5 off in pkgs.; 80, 10, 10, 5, 2½ off in bulk.	
Rolled thread machine bolts, ⅜ x 6 and smaller take 10 per cent lower list.	

NUTS

Semifinished	73 off

***HEXAGON CAP SCREWS**

Milled	80-10-5 off
Upset 1 in. diam. and smaller	85-10 off

***SQUARE HEAD SET SCREWS**

Milled	85-5 off
Upset 1 in. and smaller	80-10-5 off

*Discounts dated Jan. 23, 1930.

Cut Nails, Chain, Piling

Cut nails, c.l., mills	2.45c
Do. less carloads	2.55c
Chain, BB, BBB, 9/16-1½ in.	33 1/3 off
Sheet piling, Pitts.	2.00c to 2.10c

Bars

Tractor Orders Increase Tonnage at Chicago—Drought May Reduce Buying—Market Quiet

BAR PRICES, PAGE 83

Chicago—Bar mills are booking heavier tractor works specifications as a result of the Russian order under production by one builder. Russian orders placed with two other western tractor plants will result in tonnage later in the season. The widespread drought may lower estimated domestic implement and tractor sales for autumn by 30 per cent or more in some localities. Reports are that more than $40,000,000 in tractor and combine orders are being placed in this country for Soviet Russia's collective and state farms. Thus the export position may offset much of the domestic loss. Automotive orders for the remainder of this month will not be heavy. Alloy bar mills are awaiting September automotive schedules. Some bar users are surveying needs of 30 to 60 days hence and one producer reports fair inquiry. Soft steel bars remain at 1.75c, mill, despite recent pressure from buyers. Bar iron now is quoted 1.75c to 1.85c, Chicago, a drop of $1 to $2 a ton, which is an adjustment to the recently lowered soft steel bar range.

New York—Steel bar demand is marking time, with prices ranging 1.65c to 1.75c, Pittsburgh. Common iron bars are 1.65c to 1.70c.

Philadelphia — Steel bar demand is slow and appears to be 15 to 20 per cent under the rate of a year ago. Prices are unchanged from 1.65, Pittsburgh, subjected to occasional differentials.

Pittsburgh—Bars continue slowest of the heavy steel products. Automotive demand has improved only moderately over the past several weeks and requirements of other leading consumers are at a low level. The general market continues 1.65c with some tonnage still bringing 1.75c.

Youngstown, O.—Somewhat better volume of steel bar sales continues. On larger tonnages 1.65c, Pittsburgh, grows more common although small lots still bring 1.75c.

Cleveland—Soft steel bar sales show a tendency to improve, but almost imperceptibly. Auto manufacturers and parts makers have scarcely increased their requirements, although consuming more heavily than in July. One important maker has noted a slight increase in July over June, while August to date is fractionally ahead of July. Local mills ask 1.70c, Cleveland, for outside delivery and 1.75c, Cleveland, for local shipment. These levels are usually met by other producers.

New Building Material Is Discovered at Columbia

New York—A building material which rises like bread to two and three times its original volume, is 66 to 75 per cent lighter than concrete, and so hard that a weight of 370 pounds per square inch leaves no impression on its surface, has disclosed unusual fire resistive properties in tests made by Prof. Albin H. Beyer, of the department of civil engineering, Columbia university. The material is composed primarily of portland cement and concrete, with the addition of lime and a small quantity of aluminum powder and soda. When poured out in a semi-liquid form, the aluminum powder generates hydrogen in the liquid mass. A layer of liquid floor filling two inches deep will rise within an hour to a height of 5 inches or more, drying rapidly as it expands.

Carborundum Co. Expands

Niagara Falls, N. Y.—In taking over the two sandpaper and abrasive plants of the American Glue Co., at a cost of $2,439,920, the Carborundum Co., this city, will add materially to its business in these fields. The Canadian plant of the Glue company, at Brantford, Ont., will be used particularly to supply the Canadian trade of the Carborundum Co.

Missouri, Kansas & Texas railroad has been authorized by the interstate commerce commission to write off about 4100 pieces of obsolete equipment valued at approximately $3,000,000, with a charge to its surplus account.

Plates

Market for Oil Tanks Is More Encouraging — Heavy Shipments for Pipe Lines Continue

PLATE PRICES, PAGE 83

Chicago—Plate mills, operating at close to 80 per cent, find the oil storage tank outlook encouraging. Bids have been asked for 2500 tons of the 10,000 tons that have been outstanding for some weeks. The tonnage is in two lots, one of 1000 tons and another of 1500 tons, for Oklahoma fields. No new tank work has been placed. Plate shipments for pipe line work remain unchanged and may reach a total of 65,000 tons for the month. Plate quotations are on the basis of 1.75c, mills.

New York—The plate market appears fairly steady at 1.75c, Coatesville. Eastern mills continue to operate at 50 to 60 per cent. Pending pipe work includes 800 tons of 11-foot pipe for Philadelphia. The local department of plants and structures is expected in the market in about three weeks for a ferryboat, requiring 175 tons, and about a month later for two additional ferryboats, requiring a total of 250 tons.

Philadelphia—Eastern plate mill operations are at 40 to 60 per cent. Prices are firmer and in some instances 1.70c, base, Coatesville, has been withdrawn and 1.75c quoted. The latter price is fairly firm, except for the usual concessions on structural and certain other classes of business.

Pittsburgh—Producers of large-diameter pipe are accounting for a substantial tonnage of plates, while fabricators also are fair buyers. Tank work and barge business are slow. The market is fairly steady at 1.65c.

Cleveland—Plates continue to move slowly, with no definite sign of sustained improvement. Several new users have been heard from, notable among which are makers of steam shovels. Boiler and tank shops are fairly busy. Prices though quotably unchanged are weak. Nothing is heard below 1.60c, Pittsburgh, with most quotations 1.65c, Pittsburgh.

Contracts Placed

2000 tons, 36 and 40-in. welded steel pipe line, Los Angeles, to Western

Pipe & Steel Co., Los Angeles.
800 tons, boilers for steam power plant, Los Angeles, to Consolidated Steel Corp., Los Angeles.

Contracts Pending

9000 tons plates, airplane carrier for United States navy. Bids postponed from Aug. 12 to Sept. 3.
1600 to 2400 tons, 54-inch steel intake, water department, East Chicago, Ind., bids due Aug. 22.
1500 tons, plates and shapes, steamship for Red D line; General Engineering Co., San Francisco, low.
800 tons plates for intake and conduit pipe, Torresdale, Philadelphia. Bids due Aug. 13.
800 tons, 11-foot steel pipe, department of water, Philadelphia. Bids asked.

Semifinished Demand Brisker at Chicago

Semifinished Prices, Page 94

Chicago—Semifinished steel specifications are the heaviest in three or four weeks, except for sheet bars. Larger sheet bar specifications are expected shortly as a result of renewed automotive activity in the Detroit district. Sheet bars, billets and slabs are unchanged at $32, Chicago.

Philadelphia—Billet business is small, with the price $31, base, Pittsburgh, for rerollers, and $37 for forging quality.

Pittsburgh—Semifinished steel orders approximate the restricted rate of operations of finishing mills. Forging billets are in slightly better demand but still are slow. Prices are unchanged at $31 for rerolling billets and sabs, and $36 for forging billets and wire rods. Rerolling material lacks the test of large tonnage buying.

Youngstown, O.—A slight recession is noted in open-hearth operations this week to 48 per cent. Billet sales have dropped. Billets, sheet bars and slabs continue $31, Youngstown or Pittsburgh.

Cleveland—Specifications for semifinished material show a slight improvement, but operations are unchanged. The leading merchant producer continues with six furnaces active, out of 14 units. Sheet bars, billets and slabs hold at $31, Cleveland and Youngstown.

Canadian Companies Merge

Toronto, Ont.—Corporate Steel Products Ltd., of Montreal, Que., has acquired control of the Western Steel Products Ltd. by exchanging stocks. The two companies will be consolidated.

Railroads

Only Small Lots of Cars Placed—Five Locomotives Bought—Little Tonnage

TRACK MATERIAL PRICES, PAGE 83

Chicago—Award of 9000 tons of rails for the Great Northern extension in Oregon may not be placed immediately because of delayed grading schedules. No new rail inquiry has appeared. Fair shipping instructions are being received for track fastenings placed earlier in the season. Track fastenings' sales amounted to about 500 tons. Orders for track accessories keep mill production at 55 to 60 per cent. Chicago Surface Lines have placed 7000 tons of rails with Illinois Steel Co. and 5000 with Inland Steel Co.

Western car shops still have work on old orders. Finished material still is being received for the 125 Green Bay & Western stock cars and the 300 Union Pacific underframes. Miscellaneous repair work on car equipment is giving the freight car shops a little business.

New York—Elgin, Joliet & Eastern railroad has closed on 300 flat cars and 250 gondolas, work to be done in its own shops. Freight cars pending include about 2600 of which little over 300 are regarded as active. Passenger and mine car inquiry are low, but the distribution of orders gives the car market a more active aspect. Locomotive demand is slow.

Philadelphia — No rail inquiries have as yet come out from the Pennsylvania or Reading roads and it is expected that these roads will not buy new rail tonnage until later in the year. In the meantime eastern rail mills are more active due to specification releases against old orders. Several eastern railroads are placing some frog, switch and other track work.

Pittsburgh—August business in track material is expected to approximate that of July, some releases recently having been received against old orders. New inquiry is light although little in the way of rails or accessories is expected for another 30 to 60 days. Little tonnage is going to test prices with quotations remaining unchanged.

Cleveland—Wheeling & Lake Erie has placed 1400 tons of rails with the Carnegie Steel Co. Chesapeake & Ohio is issuing releases for the 58,000 tons which it placed recently.

Birmingham, Ala.—Steady production of freight cars for Seaboard Air Line continues at Bessemer works of Pullman Car & Mfg. Corp. but full capacity of shop is not being sought. No new business is reported in sight.

Car Orders Placed

Navy, bureau of supplies and accounts, one box car, to American Car & Foundry Co.
St. Louis-San Francisco, 10 car sets of underframes and superstructure parts to American Car & Foundry Co.
12 passenger coaches, six each for Boston & Maine and Maine Central railroads. Contract awarded to Osgood Bradley Car Corp., Worcester, Mass.
Western Fruit Express, 100 underframes, to Standard Steel Car Co.

AD LOCOMOTIVES

Illinois Steel Co., four locomotives, to American Locomotive Co.
Lehigh Valley, one locomotive, to American Locomotive Co.

Car Orders Pending

Anglo-Chilean Consolidated Nitrate Corp., 52 ore dump-cars.

Cold Finishers Still Await Automobile Resumption

Cold Finished Prices, Page 83

Pittsburgh—Cold-finished bar demand has received but little impetus as the result of resumption of automotive operations and both incoming business and shipments are only approximating the July rates. Automotive tonnage is being placed on a small-lot basis and the outlook for September remains uncertain. Producers continue to quote 2.10c.

Cleveland — Automotive takers continue slow and parts makers are directly affected, both holding tonnages on the books of producers for release. Tonnage moves at the recent rate and the price of 2.10c, Cleveland, is firm.

Find Chromite in Montana

New York—Formation of deep-seated crystalline rocks in the Stillwater river district of southern Montana resembles that of the South African district from which a good share of the chromite used in the United States is imported, states Prof Edward Sampson, of Princeton university, who recently conducted investigations.

Structural Shapes

Inquiry Improves with Many Small Lots Up—Announce July Totals in New York—12,000-t o n Warehouse Goes in East Awards Total 42,981 tons

STRUCTURAL SHAPE PRICES, PAGE 83

New York—Outstanding in an otherwise rather quiet structural market are the awards of 12,000 tons for a warehouse here for the Lehigh Valley railroad and 4300 tons for approach work for the Hudson river bridge. Fresh inquiry is light, with shape prices steady.

Structural awards in the metropolitan district in July, as just announced by the structural steel board of trade, amounted to 61,940 tons, as compared with 49,943 tons in June and 57,775 tons in July. The total of 299,469 tons for the first seven months of this year compares with 301,430 tons in the corresponding period of 1929 by the following:

Month	1930 Tons	1929 Tons	1928 Tons
Jan.	34,951	27,626	30,204
Feb.	38,535	24,609	24,850
March	28,943	72,003	32,299
April	26,726	37,543	28,214
May	58,431	34,575	46,002
June	49,943	47,299	38,600
July	61,940	57,775	57,147
Total (7 mos.)	299,469	301,430	257,316

Boston—Aside from a number of small jobs, which in the aggregate took a fair tonnage of structural, there were no round lots awarded. The steel for the "L" Street bridge is looked to be placed this week, while the only new pending project is 350 tons for a garage for the Boston Elevated railway.

Philadelphia—Demand is slow but some promise of early improvement is held by reason of large amount of new structural work being figured. Prices continue 1.60c to 1.65c, base, eastern mills, for plain standard shapes.

Pittsburgh—Specifications for plain structural material remain steady with fabricators fairly well engaged against old orders. New business is light, with practically all awards confined to small lots. Plain material continues 1.65c to 1.70c, Pittsburgh.

Buffalo—Structural demand is improving in this district. An inquiry for 425 tons for a Niagara Falls high school is new this week. A Buffalo fabricator booked a 100-ton order for a new market here. Several previously reported inquiries, including one of about 3500 tons for the new Ford Motor Co. plant here, are scheduled for early coverage.

Cleveland—A pick-up in inquiry on smaller jobs is seen. Mount Vernon Bridge Co., Mount Vernon, O., low at $103.50 per ton, including erection, for the 12,000 tons in the Lorain-Central bridge awaits with three other bidders, the final award to be made Aug. 13. Other awards include an insurance company office at Van Wert, O., and a home for the aged at Cleveland. Several downstate jobs pend.

Chicago—Structural steel inquiry continues to improve. In contrast with the East, western inquiries are almost entirely in small lots. Awards totaled nearly 6000 tons, and inquiries about 10,000 tons. Orders from the car shops are mainly for minor car equipment repair work. Plain material is unchanged at 1.75c, base, Chicago.

Birmingham, Ala.—Several contracts in the immediate district are keeping structural steel fabricating shops more or less busy. Southern Steel Works Co. has been busy for some time and has numerous contracts ranging from 50 to 150 tons, including 115 tons for a municipal airport at Baton Rouge, La. This company is erecting 750 tons for a building at American Cast Iron Pipe Co.'s mono-cast pipe shop.

Contracts Placed

12,000 tons, Lehigh Valley warehouse, Eleventh avenue, between Twenty-sixth and Twenty-seventh streets, New York, awarded through Starrett Bros. & Eken Inc., 346 Broadway, to Fort Pitt Bridge Works, Pittsburgh.

7500 tons, office building, Broad and Bridge streets, New York, awarded through Stone & Webster, to McClintic-Marshall Co.; this award was previously noted last week as involving 5500 tons.

4300 tons, ramp and approach work for Hudson river bridge, New York, awarded by the Port authority through the Cornell Contracting Co. to McClintic-Marshall Co.

4000 tons, office building, Third avenue and Forty-fourth street, New York, to Taylor Fichter Steel Co., New York.

3000-4000 tons, tube piling, foundation work, Lehigh Valley warehouse, Eleventh avenue, New York, to Virgina Bridge & Iron Co., Roanoke, Va.

1779 tons, six 80,000-barrel tanks, Detroit, for Fuel Oil Corp., to Chicago Bridge & Iron Co., Chicago.

1600 tons, plant for Procter & Gamble, Long Beach, Calif., to Consolidated Steel Corp., Los Angeles.

1500 tons, Joyce-Kilmer elementary school, Chicago, to A. F. Anderson Iron Works, Chicago.

1500 tons, bank building, Battle Creek, Mich., to Whitehead & Kales, Detroit.

1300 tons, office building, Dallas Power & Light Co., Dallas, Tex., to Mosher Steel Machinery Co., Dallas.

1000 tons, office building, Dallas Gas Co., Dallas, Tex., to Mosher Steel & Machinery Co., Dallas.

1000 tons, international highway bridge at Stillwater, Minn., to American Bridge Co., Chicago.

700 tons, viaduct for Chicago & North Western railroad, at Kenosha, Wis., to American Bridge Co., Chicago.

675 tons, highway bridge near Faith, S. D., to Pittsburgh - Des Moines Steel Co., Des Moines, Iowa.

600 tons, addition to Ford Motor Co. plant, Long Beach, Calif., to Consolidated Steel Corp., Los Angeles.

550 tons, garage for federal post office, Baltimore, to Deitrich Bros., Baltimore.

500 tons, bridge, Erie railroad, Paterson, N. J., to American Bridge Co.

400 tons, piling, Wilson line wharf, Pennsgrove, N. J., to Bethlehem Fabricators, Bethlehem, Pa.

400 tons, Illinois highway bridges, to Vincennes Bridge Co., Vincennes, Ind., and Illinois Steel Bridge Co., Jacksonville, Ill.

335 tons, motion picture theater, Devon and Western avenues, Chicago, to Midland Structural Steel Co., Chicago.

305 tons, Montgomery county court house, Rockville, Md., to Deitrich Bros., Baltimore.

300 tons, apartment, Wood Haven boulevard and Ninety-ninth street, Woodhaven, L. I., to G. M. Iron Co., Brooklyn, N. Y.

300 tons, building, Chester, Pa., for Chester *Times*, to Bethlehem Fabricators, Bethlehem, Pa.

300 tons, office building, Van Wert, O., for Central Manufacturers' Insurance Co., to Pittsburgh Bridge & Iron Co., Pittsburgh. General contract to Baker-Shindler Co., Defiance, O.

275 tons, bridge, New York Central Railroad, to American Bridge Co.

250 tons, Deerfield academy, Deerfield, Mass., to Berlin Construction Co.

250 tons, freight house, Merchandise Mart, Chicago, for Chicago and Northwestern railroad, to Vierling Steel Works, Chicago.

230 tons, sintering plant, Pittsburgh, Steel Co., Monessen, Pa., to McClintic-

Awards Compared

	Tons
Awards this week	**42,981**
Awards last week	**34,432**
Awards two weeks ago	**38,982**
Awards this week in 1929	**42,021**
Av. weekly awards, 1930	**35,279**
Av. weekly awards, 1929	**41,603**
Av. weekly awards, July	**37,137**
Tot. awards to date, 1929	**1,372,916**
Tot. awards to date, 1930	**1,164,187**

Marshall Co., Pittsburgh.
230 tons, department store, Joliet, Ill., to Gage Structural Steel Co., Chicago.
150 tons, Masonic temple, Santa Anna, Calif., to Minnesota Moline Power & Implement Co., Los Angeles.
150 tons, airport and hangar, Meridian, Miss., to Ingalls Iron Works Co., Birmingham, Ala.
143 tons, Home for Aged Women, Cleveland, to Kilroy Structural Steel Co., Cleveland.
130 tons, furnace building, Steubenville, O., for Wheeling Steel Corp., to McClintic-Marshall Co., Pittsburgh.
115 tons, municipal airport, Baton Rouge, La., to Southern Steel Works Co., Birmingham, Ala.
114 tons, bridge, Frying Pan Creek, Rainier National park, Wash., to Wallace Bridge & Structural Steel Co., Seattle. A. F. Berni, Portland, Oreg., general contractor.
100 tons, for Elk street market, Buffalo, to Buffalo Structural Steel Co., Buffalo.
Unstated tonnage, apartment, Eighty-sixth street and Amsterdam avenue, New York, to Paterson Bridge Works, Paterson, N. J.

Contracts Pending

6500 tons, subway for electric railroad terminal, St. Louis.
6000 tons, power house, New York hospital, Cornell medical unit, First avenue and Seventieth street, New York. Expected to be let this week through Marc Eidlitz & Son.
5000 tons, loft, for Greshan Realty Co., Forty-ninth street and Madison avenue, New York.
4500 tons, state office building, Columbus, O., bids close Aug. 23.
3800 tons, grade crossing, Dearborn, Mich., for Michigan Central railroad.
2000 tons, suspension bridge, Wheeling, W. Va.
2000 tons, bascule bridge, Cambridge, Mass.
2000 tons, bridge, Bucksport, Me.
1350 tons, Petroleum Tower office building, Dallas, Tex.
1800 tons, Federal post office and court house, Wichita, Kans.
1800 tons, State building, First street, Los Angeles; bids received.
1000 tons, Bell Telephone building, Philadelphia.
800 tons, hospital, Baltimore.
750 tons, open-hearth bridge, for Weirton Steel Co., Weirton, W. Va. Fort Pitt Bridge Co., low.
750 tons, pump houses for Tex-Chicago natural gas line.
750 tons, Central street subway, Evanston, Ill.
720 tons, Randolph street suburban station, for Illinois Central railroad, Chicago.
700 tons, high school, Chicago Heights, Ill.
550 tons, garage, Amsterdam avenue and 101st street, New York.
530 tons, truss span, Elmira, Mo., for Rock Island railroad.
500 tons, Cleveland clinic, general contract to Crowell & Little Construction Co., Cleveland. No date set for closing.
450 tons, state dormitory building, London, O.; bids close Aug. 12.
450 tons, addition to Bank of Italy, San Francisco; bids received.
425 tons, school, Niagara Falls, N. Y.
400 tons, Pier No. 1, San Francisco, bids received.
350 tons, central service station for Queens Electric Light & Power Co., Flushing, L. I.
350 tons, Boston, garage for Boston elevated railway at Bartlett street, Roxbury district, Boston.
300 tons, bridge for Pennsylvania railroad, at Dayton, O., American Bridge Co., low.
300 tons, Home Savings bank, Milwaukee.
300 tons, grade separation work, Chicago, for Chicago, Milwaukee, St. Paul & Pacific railroad.
250 tons, Bai Hai temple, Wilmette, Ill.
250 tons, gymnasium for Valparaiso University, Valparaiso, Ind.
250 tons, stamping plant addition, Ohio Rubber Co., Willoughby, O. General contract to H. K. Ferguson Co., Cleveland. No date set for closing.
220 tons, plant addition, Calco Chemical Co., Bound Brook, N. J.
200 tons, Vanderbilt residence, 60 East Ninety-third street, New York. George A. Fuller, general contractor.
200 tons, court house, Reading, Pa.
175 tons, bridge, Croton Lake, N. Y., for New York city water department, New York.
150 tons, substation No. 11, West 134th street, for New York Central railroad, New York.
150 tons, sanatorium, Lorain county, O., bids close Aug. 22.
140 tons, warehouse, Capstan Glass Co., Connellsville, Pa., general contract to Austin Co., Cleveland.
100 tons, sales and service station, for Beckwith Machinery Co., Pittsburgh, general contract to Austin Co., Cleveland.
100 tons, highway bridge, Lansing, Mich.

Concrete Bars

Reinforcing Demand Fair with Slight Upturn Noted Not Believed Permanent—Small Lots Feature—1000-ton Bridge Approach Up at New York

REINFORCING BAR PRICES, PAGE 83

New York—Reinforcing bar demand is less active. Included in sizable business soon to be awarded are 1000 tons for the Hudson river bridge approach. Bars from jobbers range 2.40c to 2.50c with higher prices on lots of under five tons.

Boston—Conditions remain quiet for concrete bar producers. The 155 tons for the physics laboratory of Harvard university was awarded in the past week to the Truscon Steel Co., while the 400 tons required for the dormitory for the same institution still is pending. Otherwise, some 200 tons was sold in odd lots, for which there is a fairly good demand.

Pittsburgh—Reinforcing bar demand is fairly steady with a seasonal decline expected in the near future. Most orders involve small lots and little buying of more than 100 tons at a time is noted in this district. Prices remain 1.90c to 2.00c for cut lengths and 1.65c to 1.75c for stock lengths.

Chicago—Residential building inquiry for reinforcing bars, which has been extremely slow for a year, is showing more life. Several important apartment house projects are out for figures. Small-lot inquiries are active. July building permits in Chicago dropped 187 units and about 43 per cent in value from July of 1929. Billet reinforcing bar prices for lots over 500 tons are 1.85c.

Buffalo—Reinforcing bar demand, while not materially improved to date, shows signs of revival. One inquiry for 172 tons for a nearby school is reported this week while there is about 1500 tons of previously reported inquiry awaiting coverage.

Cleveland—Little is moving and even small lots, under 100 tons, are scarce. The 700 tons involved in the station road bridge, Brecksville, O., awaits placement and will probably be awarded within a few days by the Highway Construction Co., Cleveland, general contractors.

Birmingham, Ala.—New business has shown a little easing off recently, but production is being maintained. Several bridges to be built of concrete, in addition to a considerable amount of road building projected, are being closely watched. Connors Steel Co. reports day and night turn on light-weight steel shapes, including reinforcing concrete bars.

Awards Compared

	Tons
Awards this week	**1,280**
Awards last week	**6,197**
Awards two weeks ago	**6 192**
Awards this week in 1929	**5,540**
Average weekly awards, 1929	**6,235**
Av. weekly awards, 1930	**6,754**
Average weekly awards, July	**6,146**
Total awards to date, 1929	**205,774**
Total awards to date, 1930	**222,881**

Contracts Placed

250 tons, dairy building, for Borden

(*Concluded on Page* 91)

Strip

Slow Buying at About July Rate —Prices Weak and Production Schedules at Low Rate

STRIP PRICES, PAGE 83

Pittsburgh—Demand for strip steel continues slow, with incoming tonnage showing little improvement over that of July. Automotive requirements are dragging but some other consumers of cold-rolled material are taking heavier tonnages than a month ago. Mill operations continue at 40 per cent for hot rolled and 25 to 30 per cent for cold. Prices lack strength although hot-rolled strip generally is 1.65c for wide and 1.75c for narrow. Reports of shading on cold-rolled are more frequent with the general quotation of 2.45c, Pittsburgh, usually applying and 2.35c heard on large tonnages.

New York—Cold-rolled strip steel prices have settled 2.35c to 2.45c, Pittsburgh, the inside figure near to the going market. Hot strip is unchanged at 1.65c to 1.70c, Pittsburgh, on wide and 1.75c to 1.80c on narrow. Buying is at low ebb.

Philadelphia—Hot-rolled strip continues at 1.65c and 1.75c, Pittsburgh, subject to occasional exceptions.

Cleveland—Demand continues at the same rate for the first week in August as in July, which was the lowest since December. Customers are specifying quick deliveries, tending to keep mills on continually and adding to producers' overhead. There are no price changes with cold-rolled 2.45c, Cleveland, and shading to 2.35c heard; 1.65c, Pittsburgh, on wide and 1.75c on narrow.

Chicago—Cold strip mills are without appreciable gain in automotive tonnage. Not much fresh business is expected for August, but hope is seen in prospective September schedules from automotive works. Cold strip prices reflect the weakness in eastern territory.

Rivet Prices Down $3; Bolts and Nuts Steady

Bolt, Nut, Rivet Prices, Page 83

Chicago—Shipping orders from jobbers and several implement and tractor works for nuts and bolts have increased in the last few days, resulting in a heavier volume than in several weeks. Production is 40 to 45 per cent. Prices for structural rivets in carload lots are down $3 a ton to 2.85c, Chicago. Bolts and nuts remain unchanged.

New York—Operations at eastern bolt and nut plants are easier, now probably averaging 45 per cent of capacity. Buying is devoid of large orders. Prices are unchanged.

Pittsburgh — Structural rivets have been officially reduced $3 a ton to 2.75c, Pittsburgh. Small rivets and bolts and nuts are unchanged. Business continues slow, with operations 40 to 50 per cent.

Cleveland—Last week's improvement continues and orders are running 30 per cent ahead of the weekly rate last month, according to a local maker whose operations have firmed upward to over 50 per cent of capacity. Motor circles have not opened up in their requirements nor have the railroads, but the jobbing business has been good. Price of 73 off list continues on bolts and nuts. Rivets, in the volume unchanged of last week, are selling at 2.75c, Cleveland.

Warehouses Dull; August May Not Better July's Sales

Warehouse Prices, Page 105

New York—Jobbing prices are unchanged, with demand showing little improvement over the low rate of July.

Boston—Business in New England warehouses continues to move quietly. Prices are firm and inasmuch as small amounts of various lines are being taken, the price ranges hold exceptionally well on this class of business.

Philadelphia—Jobbers report their current sales falling off again and volumes are running about 25 per cent under the average of a year ago. Prices continue unchanged.

Buffalo—Small lot buying continues to dominate. Plates and shapes have shown some improvement in recent purchases. August business is about equal to that of July.

Detroit—Sales continue for the first week in August at July's weekly rate. Inventories are low among plants, adding encouragement to the jobbing picture.

Cincinnati—Jobbers report a slight recession in tonnage during the past week, although confident August business will be on a par with July. Prices are unchanged.

St. Louis—While somewhat spotty, warehouse business since the last of July has developed measurable improvement. Requirements of a seasonal sort from the south are making themselves felt. Wire and wire products continue extremely dull.

Cleveland—Consumption of iron and steel from warehouse stocks in this district during July averaged approximately 10 per cent below the rate of June, reports from jobbers indicate. Business booked so far this month also is on a low level, running about even with the July average. Orders are not appearing in sufficient volume to afford prices a fair test. Quotations, therefore, are unchanged and nominally firm.

Steel Operations Ease Off To About 58 Per Cent

Youngstown, O.—Of the 51 independent open hearths, 24 are melting steel. District mill operations show little change for the week. Pipe mill production is higher and flat rolled products are lower. Youngstown Sheet & Tube Co. announced a 5 per cent reduction; Republic Steel Corp. activities are higher. Fifty-one of 120 independent sheet mills are active. Tin plate production is down to 60 per cent and strip is about 50. Independent bar mills are at 50; Corporation's at 60. Pipe operations are above 70.

Pittsburgh—Ingot production is lower at 55 per cent. Finishing mills are steady at 50 for sheets and 70 for tin plate. Strip mills continue 35 to 40, with pipe lower at 60 to 75.

Buffalo—Steelworks have increased their operating rate to 59 per cent of open-hearth capacity. There is nothing in sight to indicate a major change in this rate, which compares with 56 per cent operations a week ago.

Cleveland—The 48 per cent rate of capacity continues, with 16 of 34 open hearths melting steel and the individual rate of each of the district's four producers unchanged.

Chicago—Operations are at 55 per cent, with 17 of the 36 steelworks blast furnaces active. Four of the idle steelworks furnaces are banked. Sheet mills have gained 10 to 15 points and now are close to 70 per cent.

Birmingham, Ala.—Although some of the smaller steel fabricators are active, demand for steel shows no improvement and estimated steel production is still about 60 per cent. Feeling is mixed as to an early recuperation.

Concrete Awards

(*Concluded from Page 87*)

Co., Chicago, to Concrete Engineering Co.

175 tons, addition to St. Mary's hospital, St. Louis, to Missouri Rolling Mill Corp., St. Louis.

155 tons, Cambridge, Mass., Harvard university physics laboratory awarded to Truscon Steel Co., Youngstown, O.

150 tons, Illinois road work, to Concrete Steel Co., Chicago.

150 tons, dam, Safe Harbor, Pa., to Sweet's Steel Co., Williamsport, Pa. 1900 tons are pending on this job.

100 tons, Illinois road work, to Olney J. Dean Co., Chicago.

100 tons, hospital addition, Redwood City, Calif., to Concrete Engineering Co., San Francisco.

100 tons, paving in San Luis Obispo county, Calif., to unstated interest.

100 tons, bridge, Chester, Pa., to Taylor Davis Inc., Philadelphia.

Unstated tonnage, addition to grain elevators, Port of Portland, Oreg., to Soule Steel Co., Portland, through Albertson, Cornell Bros., general contractors, Tacoma, Wash.

Contracts Pending

1900 tons, dam, Safe Harbor, Pa.

1000 tons, subway extension, Market street, Philadelphia.

700 tons, station road bridge, Brecksville, O. General contract to Highway Construction Co., Cleveland. Subcontract to be awarded, no closing set.

500 tons, Monroe street sewer, Chicago; general contract to Underground Construction Co.

400 tons, Cambridge, Mass., Harvard university dormitory building.

345 tons, Chesapeake & Ohio grain elevator, Chicago Heights, Ill.; bids in.

390 tons, viaduct, Boston avenue, for Tulsa Union Station Co., Tulsa, Okla.; bids received.

204 tons, Hearthstone Home apartments, Fifty-eighth street and Blackstone avenue, Chicago, bids Aug. 12.

172 tons, for new high school, Niagara Falls, N. Y.; William A. Walker Construction Co., Buffalo, low bidder.

Tool, Shovel Merger Includes Canadian Units

Toronto, Ont.—The merger of the American Fork & Hoe Co., Cleveland, with the Kelley Axe & Tool Co., Charleston, W. Va., and Skelton Shovel Co., Dunkirk, N. Y., as announced last week, proves to be more extensive than at first appeared, taking in important Canadian interests. The Skelton company was a subsidiary of the Canadian Shovel & Tool Co., Hamilton, Ont., and the parent company also has joined the merger. Welland Vale Mfg. Co., Welland, Ont., also is included. The Canadian companies will now be closely associated, operating as a unit in Canada, while the American companies will operate as a unit in the United States. All properties merged were valued at approximately $20,000,000.

Pipe

Merchant Pipe Steady Though Small—New Line Tonnages Appearing on Horizon

PIPE PRICES, PAGE 105

Pittsburgh — Several attractive tonnages are pending in the line pipe market and producers are expecting to add a fair volume to their books before the end of the year. Operations continue at capacity in the production of larger sizes of seamless and lapwelded pipe although demand for buttweld pipe and smaller sizes of tubing still is dragging. Demand for oil country material is spotty, partly as a result of oil conservation programs in various fields. Buttweld pipe activity still reflects the restriction in building, while locomotive and boiler tubes and mechanical tubing also are quiet. Mill operations are slightly lower with the general average at 60 to 75 per cent.

Boston—For this season there is more inquiry and better buying of pipe. Most business is of a private nature, but totals up into fairly large tonnage. Prices are holding well, now being quoted from $36 to $37 a ton, with the usual differential on class A and gas pipe.

New York—Sluggishness dominates cast pipe demand, notwithstanding the fact that a seasonal pickup should be making its appearance. R. D. Wood & Co. have been awarded 110 tons of 6 to 20-inch pipe by Jersey City, N. J., on a bid of approximately $40.65, delivered to the municipal water department yards. Bedford Hills, N. Y., will open general contractors' bids Aug. 16 on approximately 900 tons of 4 to 12-inch cast pipe. Private buying is lacking.

Cleveland—Merchant pipe continues to move at the same pace as last week with little to feature the market. Prices are unchanged.

Chicago—Industrial and utility orders for cast water and gas pipe, although small, are steady. The volume approximates last year, despite the slow movement of municipal pipe. Bids have been tabulated for the 2000 tons of various sized cast pipe for Dayton, O., and Chicago will ask bids shortly for a fair tonnage. St. Paul has awarded 150 tons of 12-inch cast pipe. Delivered prices for 6 to 24-inch cast pipe are $45.20 to $46.20, delivered Chicago.

Birmingham, Ala.—Steady shipment of cast iron pressure pipe is noted but little is being said on new lettings. The fact that natural gas distribution is to be made in smaller towns with cast iron pipe has aroused some hopes of steady demand, but so far the tonnage has not been extensive. Base price remains $37 to $38 on 6-inch and over.

Contracts Placed

800 tons, Saugus, Mass., 6 to 16-inch pipe, 1930 requirements for last half year, awarded to Warren Foundry & Pipe Co., Phillipsburg, N. J.

771 tons, 6 and 8-inch Class 150 pipe, San Francisco, to American Cast Iron Pipe Co., Birmingham, Ala.

260 tons, 6 and 10-in. Class 150 and 200 pipe, San Francisco, to U. S. Pipe & Foundry Co., East Burlington, N. J.

150 tons, 12-inch cast pipe for St. Paul, to American Cast Iron Pipe Co., Birmingham, Ala.

141 tons, 6 and 8-inch, Delavaud, for Nampa, Idaho, and 48-inch Class B for steam power plant, Tacoma, Wash., to United States Cast Iron Pipe Co., East Burlington, N. J.

140 tons, Portsmouth, N. H., 8-inch pipe awarded to R. D. Wood & Co., Florence, N. J.

131 tons, 8 to 24-inch Class A cast iron for sewer project, Seattle, to United States Cast Iron Pipe Co., East Burlington, N. J.

110 tons, 10 and 12-inch monocast for Tacoma improvement project, to American Cast Iron Pipe Co., Birmingham, Ala.

110 tons, 6 to 20-inch cast pipe, Jersey City, N. J., to R. D. Wood & Co., Florence, N. J.

Contracts Pending

2000 tons, Providence, R. I., bids closed Aug. 8.

900 tons, 4 to 12-inch cast pipe, Bedford Hills, N. Y.; general contractors' bids to be opened Aug. 16.

500 tons, 4 to 8-inch Class 150 pipe, Fresno, Calif. Bids Aug. 15.

226 tons, 30-inch Class C, Whittier, Calif., United States Pipe & Foundry Co. low, East Burlington, N. J.

100 tons, Salem, Mass., 6-inch pipe, Donaldson Steel Co., low bidder.

Gulf States Sheet Mill Goes into Operation

Birmingham, Ala.—Gulf States Steel Co. produced its first sheet in its new mill the past week, and will go into commercial operation Sept. 1. This completes major developments of 1929-30, including blooming mill, plate mill and sheet mill, $6,000,000 being expended. Engineers of the firm of Coverdale & Colpitts, New York, have been in the district again looking over situation and ap-

This shows some of the products and shapes which our method of making welded steel tubing permits us to manufacture.

The three tubes in the upper left corner are tests of expanding and distorting without fracture of the weld.

CHICAGO—Steel Sales Corp., 129 So. Jefferson St.
ST. LOUIS—E. R. Hensel Steel & Copper Co., Planters Bldg.

MICHIGAN
STEEL TUBE PRODUCTS COMPANY
BUFFALO STREET, DETROIT

parently a 1930-31 program of development is being studied.

Maker of Welded Product Welds Plant Addition

Finding arc welding efficient in construction of its product, heavy snow plows, the Maine Steel Products Co., South Portland, Me., is using arc welding in fabricating an addition to its plant for use as an assembly and shipping room. It will have 5000 square feet of floor space and will be equipped with cranes for handling heavy material and products. The walls will be of steel siding welded to the steel frame. The company's own workmen are erecting and welding the structure.

Coal Supply for 30 Days

Bituminous and anthracite coal supplies in industry in the United States and Canada as of July 1 totaled 31,500,000 net tons, or approximately a 30-day supply, states the National Association of Purchasing Agents, New York. As of July 1, the by-product coke industry had 26-days supply on hand, electric utilities 42 days, coke gas plants 51 days, railroads 20 days, steel mills 34 days, and other industries 30 days.

Chrome Ore Leads Imports

Philadelphia—Imports at this port during the week ending Aug. 9 included 3041 tons of chrome ore from Cuba, 2000 tons of chrome ore from Portuguese Africa, 1705 tons of pig iron from British India, 224 tons of deformed steel bars from Belgium, 12 tons of bearing tubing from Sweden, 9 tons of steel bars from Sweden, 10 tons of steel bars from Belgium, 6 tons of steel bars from France, 80 tons of structural shapes from France, 18 tons of steel bands from France and 13 tons of steel bands from Belgium.

$17,700,000 for Oil Well

Pittsburgh—The option of the United States Steel Corp. for the Oil Well Supply Co., Pittsburgh, involves $6,865,800 in cash and 64,992 common shares of the corporation, placing a value of about $17,700,000 upon the Oil Well company. The option expires Aug. 25. The corporation will assume all debts of the Oil Well company except $800,000 6 per cent debentures of the Wilson-Snyder Mfg. Corp., a subsidiary.

Wire

Farm Needs Likely to Be Cut by Dry Weather—Automotive Orders Continue Light

WIRE PRICES, PAGE 83

Pittsburgh—Demand for practically all wire products remains light with incoming tonnage slightly below that of a month ago. Orders from the automotive industry are confined to small lots with little improvement over the rate prior to recent shutdowns. Nail demand is slow with prices generally on the basis of $2.05 to carload buyers. Occasional concessions from this figure are heard but do not represent the general market. Staples and fence wire are on a basis corresponding to the $2.05 standard wire nail price. Plain wire and wire rods are steady at 2.30c and $36, respectively.

Worcester, Mass.—Wire production is steady at about 50 per cent of capacity. Although much tonnage was shipped in July, August will come up to the July rate at present indications. Most producers are looking for heavier production in September. Plain bright wire to dealers is quoted at 2.40c, base, Worcester.

New York—Wire nail manufacturers continue to hold to $2.05, Pittsburgh, to jobbers and $2.10 to $2.15, Pittsburgh, to the merchant trade. Bright wire is fairly steady at 2.30c, Pittsburgh. Demand generally is quiet.

Cleveland—Some better releases are coming from Detroit with resumption of more general automobile activity. Conditions locally continue without marked change, and there is no change in prices. Increased orders for wire for auto springs have been noted, but otherwise demand is restricted.

Chicago—Sales of woven fencing and nails are likely to fall off sharply in some sections because of the prolonged dry weather. Probability of more than 30 per cent declines in several areas is foreseen. In other territories, common wire sales may be close to normal, as actual loss reflected in cash returns on crops may not be as far reaching as had been indicated. Little automotive buying of manufacturers' wire is expected for August, but possibility of additional tonnage for September is indicated. Further concessions are being reported in wire nails, which are $2.15 to $2.20, Chicago or western mills, for jobbing lots. Galvanized wire is unchanged at 2.80c to 2.90c.

Iron Ore Situation Is Now More Stable

Iron Ore Prices, Page 94

Cleveland—Ore consumers have ceased cutting the tonnages they previously ordered for the season. The market is devoid of inquiries and no further business is expected unless furnace operations improve in the fall or a better outlook develops for the winter. Stocks on Lake Erie docks Aug. 1 were 570,438 tons larger than on the same date last year. The Lake Superior Iron Ore association reports the following receipts and shipments for the season up to Aug. 1, figures being gross tonnages.

Port	Receipts	Shipments	Dock balance, Aug. 1 1930
Buffalo	1,782,077	128,890	1,694
Erie	292,161	352,365	64,648
Conneaut	3,807,798	3,765,021	1,646,800
Ashtabula	2,932,291	2,958,888	1,498,469
Fairport	1,021,645	997,073	373,869
Cleveland	3,753,386	2,651,574	971,736
Lorain	1,210,871	472,642	118,341
Huron	652,390	692,630	321,796
Toledo	645,173	441,546	25,185
Total	16,097,792	12,460,629	5,022,538
Comparative 1 year ago	22,438,384	17,182,569	4,452,100

Port	Tons
Detroit	398,650
Indiana Harbor	1,274,005
Gary	2,046,743
South Chicago	3,169,551
Sault Ste. Marie, Ont.	237,664
Point Edward, Ont.	186,097
Total	7,312,710
Comparative 1 year ago	8,845,556

Tin Plate Producers Fear Effect of Drought

Tin Plate Prices, Page 83

Pittsburgh—Tin plate shipments to the leading canmakers are well maintained. Although it is feared the recent drought will have an adverse effect on some of the vegetable packs, definite reports still are lacking. Operations are holding at 70 per cent. New business continues light.

Raw Material Prices

Pig Iron

Per Gross Ton

FOUNDRY, NO. 2

Chicago, furnace	$17.50 to 18.00
Pittsburgh, district fur.	18.50
Pittsburgh, delivered	19.13 to 19.63
Valley, furnace	18.00
Cleveland fur., local del.	18.00
Philadelphia, delivered	19.26 to 19.76
Virginia, furnace	17.75
Granite City, Ill., fur.	18.50 to 19.00
Buffalo, fur., local del.	18.50
Buffalo, del. Boston	21.41 to 21.91
Buff., all-rail Brooklyn	20.91 to 21.41
Buff., all-rail, Newark	19.28 to 19.78
Ala., Bir. fur., local del.	14 00
Alabama, del. Chicago	18.01
Alabama, del. St. Louis	17.42
Alabama, del. Cincinnati	16.19 to 17.19
Alabama, del. Cleveland	18.51 to 19.01
Ala., Phila., dock del.	17.25 to 18.25
Ala., Balt., dock del.	17.00 to 18.00
Alabama, New York dock	17.50 to 18.50
Ala., Boston dock del.	20 21
Tenn., Bir. base, local del.	14.00
Tennessee, del. Cin.	16.19 to 17.19
Montreal, delivered	23.50
Toronto, delivered	22.10

FOUNDRY, NO. 2X

Buffalo, fur., local del.	19.00
Buff., all-rail, Brooklyn	21.41 to 21.91
Buffalo, all-rail, Newark	19.78 to 20.28
Buffalo, del. Boston	21.91 to 22.41
Virginia furnace	18.25
Eastern, del., Phila.	19.76 to 20.26

FOUNDRY, NO. 1X

Buffalo fur., local del.	20.00
Eastern, del., Phila.	20.26 to 20.76

MALLEABLE

Chicago, furnace	17.50 to 18.00
Cleveland fur., local del.	18.00
Pittsburgh district fur.	19.00
Pittsburgh, delivered	19.63 to 20.13
Valley furnace	18.50
Buffalo fur., local del.	19.00
Eastern Penna., delivered	19.26 to 20.91
Granite City, Ill., fur.	18.50 to 19.00
Montreal, delivered	24.00
Toronto, delivered	22.60

BASIC

Pittsburgh dist. fur.	18.50
Pittsburgh, delivered	19.13 to 19.63
Eastern Penn., del.	18.00 to 18.50
Buffalo fur., local del.	18.00
Montreal, delivered	22.50
Valley furnace	18.00

BESSEMER

Valley furnace	18.50
Pittsburgh, delivered	20.26

LOW PHOS

Valley fur., standard	27.00
Philadelphia, standard	24.26 to 24.76
Furnace, copper-bearing	23.00 to 23.50

GRAY FORGE

Pittsburgh district fur.	18.00
Pittsburgh, delivered	18.63 to 19.13

CHARCOAL

Lake Superior, del. Chicago	27.04

SILVERY

Jackson County, O., fur., in per cents

5—$21.50; 6—$21.50; 7—$22.00; 8—$22.50 to $23.00; 9—$23.00 to $24.00; 10—$23.50 to $27.00; 11—$24.50 to $28.00; 12—$25.50 to $30.00; 13—$26.50 to $32.00.

BESSEMER FERROSILICON

Jackson County, O., fur., in per cents

10—$29; 11—$31; 12—$33; 13—$35; 14—$37; 15—$39; 16—$42; 17—$45.

Coke

Prices Per Net Tons

Beehive Ovens

Connellsville furnace	$2.50 to 2.60
Connellsville foundry	3.50 to 4.85
New River foundry	6.00
Wise county foundry	4.25 to 5.00
Wise county furnace	3.50 to 4.25

By-Product Foundry

Newark, N. J., del.	$9.00 to 9.40
Chicago ovens	8.00
New England, del.	11.00
St. Louis, del.	9.00
Birmingham, ovens	5.00
Indianapolis, del.	8.25
Ashland, Ky., ov., Connell. basis	5.50
Portsmouth, O. ov., Connell. basis	5.50
Buffalo ovens	8.00 to 8.50
Detroit ovens	8.50
Philadelphia, del.	9.00

Iron Ore

LAKE SUPERIOR ORE

Gross Ton, 51½%, Lower Lake Ports	
Old range	$4.80
Mesabi	4.65
Old range	4.65
Mesabi nonbessemer	4.50
High phosphorus	4.40

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic, 56-63%, contract	10.00
Copper-free low phos. 58.65%	nom.

FOREIGN ORE

Cents per units, alongside docks Atlantic ports

Foreign manganiferous ore, 45-55% iron, 6-10% manganese	10.50 to 11.00
North African low phosphorus	10.50
Swedish basic, 65%	9.50 to 10.50
Swedish low phos.	11.00
Spanish, North African basic, 50 to 60%	9.50 to 10.00
Newfoundland fdy., 55%	9.00
Tungsten, spot and future short ton unit, duty paid	$11.75 to 12.00
Chrome ore, 48%, net ton c.i.f.	$21.50 to 22.50

Manganese Ore

Prices, not including duty, are cents per unit; cargo lots.

Caucasian, 52-55%	27 to 28 cents
Indian, 48-50%	27 to 28 cents
Brazilian, 46-48%	25 cents

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. Works

First Quality

Pennsylvania, Ohio, Illinois, Kentucky, Missouri, Maryland	$43.00
Georgia, Alabama	40.00 to 47.00

Second Quality

Pennsylvania, Ohio, Illinois, Kentucky, Missouri, Maryland	35.00 to 38.00
Georgia, Alabama	30.00 to 35.00

SILICA BRICK

Pennsylvania	43.00
Joliet, Ill., East Chicago, Ind.	52.00
Birmingham, Ala.	50.00 to 51.00

MAGNESITE BRICK

Per net ton

9 x 4½ x 2½	65.00

MAGNESITE

Dead burned grain, net ton, Chester, Pa., or Baltimore base	40.00
Domes, Chewelah, Wash., base	22.00

CHROME BRICK

Net ton, Chester, Pa., and Baltimore base, 9 x 4½ x 2½	45.00

Semifinished Steel

Prices Per Gross Ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$31.00
Pittsburgh, bessemer	31.00
Youngstown	31.00
Cleveland	31.00
Philadelphia	36.30
Chicago	32.00
Forging, Chicago	37.00
Forging, Pittsburgh	36.00
Forgings, Philadelphia	41.30

SHEET BARS

Pittsburgh	$31.00
Youngstown	31.00
Cleveland	31.00
Chicago	32.00

SLABS

Pittsburgh	$31.00
Youngstown	31.00
Cleveland	31.00

WIRE RODS

Pittsburgh, Cleveland	$36.00
Chicago	37.00

SKELP

All grades, Pittsburgh	1.70c to 1.75c

Ferroalloys

(In dollars, except Ferrochrome)

*Ferromanganese, 78-82%, tidewater, duty paid	$99.00
*Ferromanganese, del. Pittsburgh	103.79
Spiegeleisen, 19-21%, domestic fur. spot†	33.00
*Ferrosilicon, 50 per cent, freight all., c. l.	83.50
*Do, less carload	88.50
Do, 75 per cent	13.00 to 15.00
Ferrochrome, 66-70 chromium, 4-6 carbon. cts. lb., con., del.	11.00
Do, for spot delivery	11.50
Ferrotungsten, stand., lb. cont.	1.10
Ferrovanadium, 30-40 per cent, per lb., contained, on analysis	3.15 to 3.65
Ferro-carbon-titanium carload producers' plants, net ton	160.00
Do., one ton to c. l.	170.00
Ferrophosphorus, per ton, carload 17-19 per cent, Rockdale, Tenn., basis (18 per cent)	91.00
Ferrophosphorus, electrolytic per ton, carload, 23-25% f.o.b. Anniston, Ala., 24%	122.50

†Carloads. Differentials apply to large quantities.

*To users of carloads to 500 tons annually. Differentials apply to users of larger quantities.

Fluorspar

85 and 5 per cent grade

Washed gravel Kentucky and Illinois mines, per net ton	$18.00
Washed gravel, import duty paid east, tide, gross ton	19.50

Automobile Sheets

Metallic Furniture Sheets

Full Pickled Cold Rolled Sheets

Single Pickled Cold Rolled Sheets

For your most difficult stamping operations

Specify

EASTERN NORMITE

Thoroughly dependable and guaranteed uniform in quality and finish.

Save with Steel

The Eastern Rolling Mill Company

Baltimore, Md.

Address Our Nearest Office

DETROIT, MICH.
Dean Higgins & Co.
614 Free Press Bldg.

TOLEDO, OHIO
Dean Higgins & Co.
Ohio Bldg.

CINCINNATI, OHIO
Dean Higgins & Co.
Union Central Bldg.

CAMBRIDGE, MASS.
Wetherell Bros. Co.
251 Albany St.

Pig Iron

Shipments Gaining Over July—Sellers Going Far Afield for Orders—Prices Still Weak

PIG IRON PRICES, PAGE 94

Pittsburgh—Business in the pig iron market has moderated slightly, activity now being at the lowest point of the year. Melters display no interest in any except current needs and operations at practically all foundries has failed to improve. Inquiry for all grades is lacking. Blast furnace operations have been adjusted to light requirements, with only two out of seven merchant stacks in the valleys in blast. Producers continue to suffer in competition with Cleveland and Buffalo furnaces. Prices are unchanged.

Boston—Small sales of pig iron are more numerous, and the total for the past week increased to 4000 tons, of which Mystic Iron Works, Everett, Mass., booked 2500 tons. Most of the remainder went to Buffalo furnaces. Prices are steady.

New York—Approximately 7000 tons of pig iron has been closed here. Buffalo iron is $16 to $16.50, base, furnace, with the bulk of tonnage going at the lower figure. Southern iron is easy at $17.50 to $18.50, delivered, New York docks. Orders include 1000 tons for the Pittsfield, Lynn and Everett, Mass., plants of the General Electric Co., placed mainly with Buffalo furnaces, and 200 tons for the Holyoke, Mass., plant of the Worthington Pump & Machinery Corp. Stocks at some foundries are exceedingly low.

Philadelphia—Purchases of basic iron by at least two eastern steelworks are expected soon. The past week's business included more orders for low phosphorus iron. Two eastern Pennsylvania furnaces refuse to quote foundry iron at less than $19, base, furnace.

Philadelphia—New purchases by pipe shops amounted to about 15,000 tons, making about 30,000 tons of pipe iron that have been bought in this district in the past three weeks. Pipe companies expect to increase their operations shortly so that outlook for improved consumption is good. Practically all of the above pipe iron was bought from eastern furnaces and comparatively little is coming into this district from the south.

Buffalo—The market here is quiet. Iron continues to be piled as shipments are only slightly larger than those in July. Prices are steady.

Youngstown, O.—An increasing number of small sales of pig iron is reported. The gain in tonnage is apparent from week to week. However, no increase in production is looked for in the immediate future. No. 2 foundry and basic are held at $18, valley, and bessemer and malleable at $18.50.

Cleveland—Pig iron sales are not increasing as August progresses but shipments are gaining and probably will show a substantial improvement over July. The daily average rate for one merchant interest thus far is a third larger than that of last month. Makers located nearest the center of the automotive industry report the most noticeable pick up. Marmon Motor Car Co., Indianapolis, closed for 1000 tons of foundry iron. Total sales by furnace interests with headquarters in Cleveland were 14,000 tons, approximately the same as in the week preceding. Inquiries have been coming to Cleveland and other lake furnaces from distant points, one as far as West Virginia, since offers below $17, base, lake furnace, have been made, but freight rates are prohibitive. Nevertheless there has been more selling by northern furnaces outside of their usual territories than in many months. In Cleveland the usual price is $18, base, furnace.

Chicago—All indications are that August shipments of pig iron will surpass July by a fair margin. Malleable melters doing automotive work are at a slow pace. One of the larger shops is down to less than 40 tons of castings weekly. Pig iron buyers continue to seek lower prices. Base grades are quoted $17.50, Chicago furnace, for small and moderate orders. Weekly sales for the past three or four weeks have been close to 10,000 tons. A cargo of eastern iron has arrived at Milwaukee on a consignment placed early in the season. A cargo of silvery iron has been docked at Chicago for shipment against old orders. Several sales of southern iron are noted in this market at $12, base, Alabama furnace, but it is reported $11.50 could be done on attractive tonnage.

St. Louis—Shipments of pig iron are decreasing, due in part to the persistency of the heat wave. Sales in the past week totaled only 1800 tons. St Louis Gas & Coke Corp. has blown out one of its stacks. Southern iron is offered freely at a price figuring back to $12.50, base, Birmingham. Offerings from Chicago furnaces also are liberal.

Birmingham, Ala.—New business in pig iron is less than current output. Small lots are being sold in the East and Middle West. Prices are unchanged.

Toronto, Ont.—Demand for merchant pig iron shows some improvement, though confined to small lots. Prices are unchanged.

Cincinnati—Interest in the pig iron market here centers on an inquiry for 2000 tons of northern foundry iron, the largest in several weeks. Total new business during the past week was less than this tonnage, all in small lots for spot shipment. Prices are unchanged.

Ferroalloys Unchanged; Movement Is Slow

Ferroalloy Prices, Page 94

New York—Spot carloads of domestic spiegeleisen, 19 to 21 per cent, continue to move in restricted volume at $33, furnace, subject to differentials on larger quantities. Ferromanganese is $99, duty paid, tidewater, on lots of carloads to 500 tons annually.

While demand for tungsten remains almost nonexistent, the market is a little more hopeful on account of some buying in Europe. No business has been done here for so long that it is believed consumers soon will find themselves short. Bids slightly under the equivalent of $12, duty paid here, from the European buyers, have been refused. The markets of other ferroalloys and alloy materials show no changes in prices, and little change in the slow rate of shipments.

Completes New Steam Plant

Michigan Steel Corp. has completed the installation of a new steam plant at its plant at Ecorse, Mich., which is being enlarged to provide for a considerable increase in production. The new steam plant has automatic stokers and is of the latest type and design.

Cleveland Cliffs Iron Co., Cleveland, is changing the name of two ore carriers. The MARQUETTE has been named the LA SALLE, while the H. F. BLACK has been christened the JOLIET.

Scrap

Consumers Show More Interest —Prices Hold Well — Some Grades Are Scarce

Chicago—More consumer interest in iron and steel scrap is shown by several foundry interests that now find it advisable to accumulate reserves. Practically no sales of open-hearth scrap are being closed. Steelworks melters are expected to continue using relatively more pig iron this month. Dealers closing pending orders find it difficult to book even nearby tonnage in any volume. Prices, except for occasional soft spots, have remained unchanged for about three weeks. Shipments to melter's yards probably are 50 per cent under normal. Heavy melting steel remains unchanged at $12 to $12.25. A consumer sale of iron axles brought out a reduction of $2 a ton.

Boston—For the third consecutive

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross tons delivered to consumers, except where otherwise stated.

HEAVY MELTING STEEL

Birmingham ..	10.50 to 12.00
Boston dealers	8.50 to 9.00
Buffalo, No. 1..	13.00 to 13.50
Buffalo, No. 2..	11.00 to 11.50
Chicago	12.00 to 12.25
Cinci., deal.	11.25 to 11.75
Cleve., No. 1.....	12.00 to 12.25
Cleve., No. 2....	11.25 to 11.50
Det., No. 1 deal	1100 to 11.50
Det., No. 2 deal	9.50 to 10.00
E. Pa. del. mill	12.50
N. Y. del. R. R.	9.00 to 10.00
N. Y. deal No. 2	6.25 to 6.75
N. Y., deal yd.	6.00 to 6.50
Pitts. No. 1....	14.50 to 15.50
St. L., No. 1 sel.	11.25 to 11.75
Federal, Ill.	10.75 to 11.25
Granite C., Ill.	10.00 to 10.25
Valleys, No. 1.	15.00 to 15.50

COMPRESSED SHEETS

Buffalo, dealers	11.25 to 11.50
Chicago	10.25 to 10.75
Cleveland	11.50
Detroit, dealers	11.00 to 11.50
E. Pa. new mat.	11.50
Pittsburgh	14.50 to 15.50
Valleys	14.50 to 15.00

BUNDLED SHEETS

Buffalo	9.00 to 9.50
Cinti., deal.	9.75 to 10.25
Cleveland	9.00 to 9.25
Eastern Pa.	9.50 to 10.00
Pittsburgh	12.50 to 13.00
St. Louis	6.50 to 7.00

SHEET CLIPPINGS LOOSE

Chicago	7.50 to 8.00
Cincinnati	7.75 to 8.25
Detroit, dealers	8.00 to 8.50
St. Louis	6.50 to 7.00

STEEL RAILS SHORT

Birmingham	11.00 to 12.00
Boston, dealers	**7.50 to 8.75**
Buffalo	**16.25 to 16.75**
Chicago (3 ft.)	**13.50 to 14.00**
Chicago (2 ft.)	14.00 to 14.50
Cinti. deal.....	17.00 to 17.50
Detroit, deal....	15.00 to 15.50
Pitts. (open-hearth, 3 ft. and less)	17.50 to 18.00
St. Louis ...	14.00 to 14.50

STOVE PLATE

Birmingham ..	10.00 to 11.00
Boston, con.....	8.50 to 9.00
Buffalo	10.25 to 10.50
Chicago, net....	**9.50 to 10.00**
Cinci., deal. net	7.00 to 7.50
Det., net, deal..	**9.00 to 9.50**
Eastern Pa.	10.50
N. Y., deal. mill	6.00
St. Louis	9.00 to 9.50

COUPLERS, SPRINGS

Buffalo	**16.00 to 16.50**
Chicago	13.50 to 14.00
Eastern Pa.	17.00 to 17.50
Pittsburgh	17.50 to 18.00
St. Louis	12.00 to 12.50

ANGLE BARS—STEEL

Chicago	13.00 to 13.50
St. Louis	10.50 to 10.75

LOW PHOSPHORUS

Buf., billets and bloom crops..	17.50 to 18.00
Cleve. bil. and bloom crops.	17.50
Eastern Pa.	17.50 to 18.00
Pitts. billet and bloom crops	19.50 to 20.50
Pitts. sheet bar crops	18.00 to 18.50

FROGS, SWITCHES

Chicago	13.00 to 13.50
St. Louis	11.00 to 11.50

SHOVELING STEEL

Chicago	12.00 to 12.25
Cleveland	8.75 to 9.00
St. Louis	10.50 to 11.00

RAILROAD WROUGHT

Birmingham .....10.00 to 10.50	
Boston, dealers	7.50 to 8.00
Buffalo, No. 1.	10.00 to 10.50
Buffalo, No. 2.	13.50 to 14.00
Chicago, No. 1.	11.25 to 11.75
Chicago, No. 2.	12.00 to 12.25
Cinti., No. 2	11.25 to 11.75
Eastern Pa.	14.00 to 14.50
N. Y., No. 1 dl.	10.00 to 10.50
Pitts. No. 2....	14.50 to 15.50
St. Louis, No. 1	9.00 to 9.50
St. Louis, No. 2	11.00 to 11.50

SPECIFICATION PIPE

Boston	6.50 to 7.00
Eastern Pa.	12.00
N. Y., deal	7.25 to 7.50

BUSHELING

Buffalo, No. 1..	11.25 to 12.50
Chicago, No. 1	9.50 to 10.00
Cinn., No. 1 dl.	9.25 to 9.75
Cinn., No. 2	6.25 to 6.75
Cleve., No. 2....	8.25 to 8.50
Detroit, No. 1 new deal.	9.50 to 10.00
St. L. No. 1....	9.00 to 9.50
Val. new No. 1	13.25 to 13.50

MACHINE TURNINGS

Birmingham	7.50 to 8.50
Boston, dealers	4.00 to 4.35
Buffalo	8.75 to 9.25
Chicago	6.25 to 6.75
Cinn., deal	7.50 to 8.00
Cleveland	7.00 to 8.00
Detroit	5.75 to 6.25
Eastern Pa.	9.00
N. Y., deal	5.00 to 5.50
Pittsburgh	8.00 to 8.50
St. Louis	6.75 to 7.25
Valleys	10.50 to 11.00

BORINGS AND TURNINGS For Blast Furnace Use

Boston, deal.....	3.50 to 4.00
Buffalo	9.25 to 9.75
Cinn., deal.	7.75 to 8.25
Cleveland	8.75 to 9.00
Detroit, deal. ..	6.25 to 6.75
Eastern Pa.	7.00 to 7.50
N. Y., deal.	4.00 to 4.50
Pittsburgh	8.50 to 9.00

CAST IRON BORINGS

Birming. chem.	12.00 to 13.00
Birming. plain	7.50 to 8.50
Boston, chem...	9.00 to 9.25
Boston, deal. ..	4.00 to 4.35
Buffalo	9.25 to 9.75
Chicago	7.75 to 8.25
Cinn., deal.	7.75 to 8.25
Cleveland	8.75 to 9.00
Detroit, deal. ..	6.25 to 6.75
Eastern Pa.	8.50 to 9.00
E. Pa., chem.	13.50 to 14.00
N. Y., deal.	4.50
Pittsburgh	8.50 to 9.00
St. Louis	9.25 to 9.50

PIPE AND FLUES

Cinn., deal	9.00 to 9.50

RAILROAD GRATE BARS

Buffalo	**9.25 to 9.75**
Chicago, net	8.50 to 9.00
Cincinnati	8.50 to 9.00
Eastern Pa.	10.50
N. Y., deal.....	6.50 to 7.00
St. Louis	10.00 to 10.25

FORGE FLASHINGS

Boston, deal	7.25 to 7.60
Buffalo	**11.00 to 11.50**
Cleve. ov. 10 in.	10.00 to 10.50
Detroit	9.50 to 10.00

FORGE SCRAP

Boston, deal. ..	6.00 to 6.50
Chicago	14.50 to 15.00
Eastern Pa.	12.00

ARCH BARS, TRANSOMS

Chicago, net ..	13.00 to 13.50
St. Louis	14.00 to 14.50

AXLE TURNINGS

Boston, deal. ..	6.75 to 7.00
Buffalo	11.50 to 12.00
Chi. steelworks	9.50 to 10.00
Cleveland	11.75 to 12.00
Eastern Pa.	11.00 to 11.50
Pittsburgh	12.50 to 13.00
St. Louis	9.25 to 9.75

STEEL CAR AXLES

Birmingham ..	19.00 to 20.00
Bos., ship. pt.	16.00 to 17.00
Buffalo	16.00 to 16.50
Chicago	16.80 to 17.35
Eastern Pa. ..	21.00 to 21.50
St. Louis	16.00 to 16.50

SHAFTING

Bost., ship pt.	13.00 to 15.00
Chicago	16.25 to 16.80
Eastern Pa.	18.50
N. Y., deal.	13.00 to 14.00
St. Louis	13.00 to 13.50

CAR WHEELS

Birming., iron..	10.00 to 11.00
Boston, iron	14.00 to 14.50
Buffalo, iron....	13.50 to 14.00
Buffalo, steel ..	16.00 to 16.50
Chicago iron....	13.50 to 14.00
Chi., roll steel	14.50 to 15.00
Cincinnati	12.00 to 12.50
Pitts., iron	15.00 to 15.50
Pitts., steel	17.50 to 18.00
St. Louis, iron	12.00 to 12.50
St. Louis, steel	13.75 to 14.25
E. Pa. steel....	13.50 to 14.00
E. Pa. iron	14.50 to 15.00

NO. 1 CAST SCRAP

Birming., cup...	12.00 to 13.00
Buffalo (mac.)	12.50 to 13.00
Boston, textile..	11.50 to 12.00
Chicago, mach.	**13.45 to 14.00**
Chi., railroad....	11.20 to 11.75
Chicago, agri...	**10.90 to 11.50**
Cinn., mach. cup., gross ..	17.75 to 18.25
Cleve. cupola ..	13.50 to 14.00
Det., net deal....	10.00 to 10.50
E. Pa. cupola..	13.50
N. Y. cup. deal.	9.50 to 9.75
N. Y., del. loc. foundries	14.00
Pitts. cupola	14.00 to 14.50
San Fran., del.	13.50 to 14.00
Seattle	14.00 to 14.25
St. L. No. 1 ma.	11.50 to 12.00
St. L. No. 1....	10.50 to 11.00

HEAVY CAST

Boston	10.50 to 11.00
Bos. Mach. cast	13.50 to 14.00
Buffalo break.	8.50 to 9.00
Cleve., break ..	8.50 to 9.00
Detroit, auto, net deal.	11.50 to 12.00
Det., break., dl.	7.00 to 7.50
Eastern Pa.	12.00
N. Y. No. 1 dl.	8.00 to 8.50
N. Y. break. dl.	7.25 to 8.10
Pittsburgh	11.50 to 12.00

MALLEABLE

Boston, R. R.....	15.00 to 15.50
Buffalo	15.00 to 15.50
Chicago, agri...	11.75 to 12.25
Chicago, R. R.	13.50 to 14.00
Cinn., R. R. dl.	15.00 to 15.50
Cinn., agri., dl.	14.25 to 14.75
Cleve., rail	15.50 to 16.00
Det. auto deal.	13.50 to 14.00
St. Louis, rail..	10.00 to 10.50

RAILS FOR ROLLING 5 feet and over

Birming. cup...	12.00 to 12.50
Boston	9.00 to 9.50
Buffalo	13.50 to 14.00
Chicago	14.50 to 15.00
Eastern Pa	13.00 to 13.50
New York	9.50 to 10.00
St. Louis	12.00 to 12.50

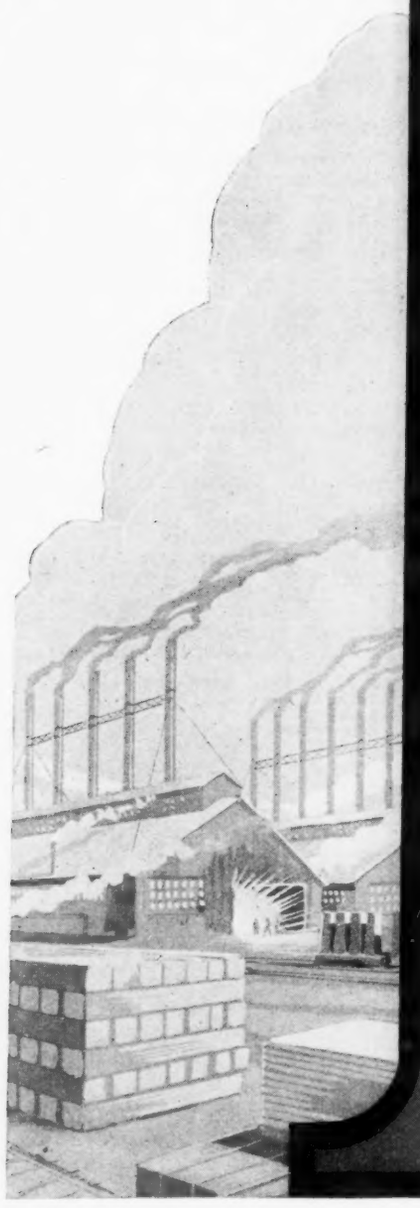
LOCOMOTIVE TIRES

Chicago, cut	15.00 to 15.50
St. L. No. 1.....	13.00 to 13.50

LOW PHOS. PUNCHINGS

Chicago	13.00 to 13.50
Pittsburgh	17.50 to 18.00
Eastern Pa.	17.00 to 18.00
Buffalo	17.00 to 17.50

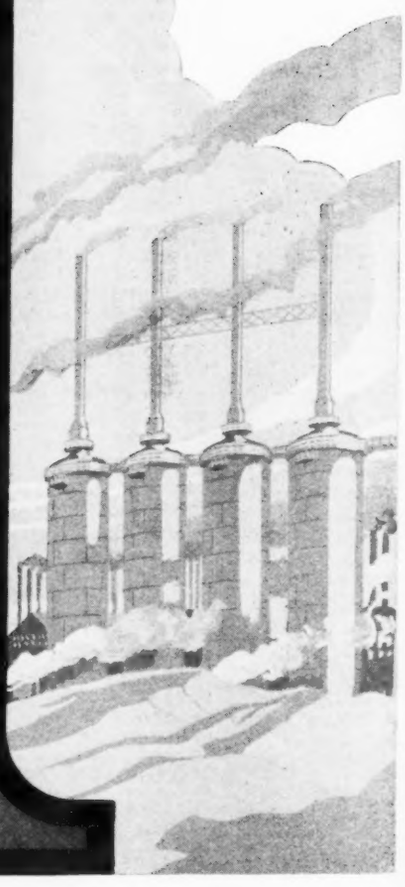
TENNESSEE STEEL



THOSE responsible for the conduct of any steel consuming activity are well aware of the fact that a dependable source of supply means more efficient results together with greater economies in their own business.

The name TENNESSEE has become a symbol of steel service to Tennessee's customers. They know that regardless of the type or magnitude of their project or endeavor, they can look to this reliable source for quality products manufactured and delivered to meet their specific requirements.

Products: Bars, Plates, Shapes, Sheets, Tool Steel, Forgings, Castings, Rails and Accessories, Semi-finished Material, Pig Iron.



Tennessee Coal, Iron & Railroad Company

General Offices: Brown-Marx Building, Birmingham, Ala.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES OF UNITED STATES STEEL CORPORATION:

AMERICAN BRIDGE COMPANY
AMERICAN SHEET AND TIN PLATE COMPANY
AMERICAN STEEL AND WIRE COMPANY
CARNEGIE STEEL COMPANY
COLUMBIA STEEL COMPANY
CYCLONE FENCE COMPANY
FEDERAL SHIPB'LDG. & DRY DOCK CO.
ILLINOIS STEEL COMPANY
NATIONAL TUBE COMPANY
THE LORAIN STEEL COMPANY
TENNESSEE COAL, IRON & RAILROAD CO.
UNIVERSAL ATLAS CEMENT COMPANY

Pacific Coast Distributors — Columbia Steel Company, San Francisco, Los Angeles, Portland, Seattle, Honolulu. *Export Distributors* — United States Steel Products Company, New York City

week prices of scrap material have remained steady. Little but contract shipments are going out and the supply continually grows less because collectors can not operate at prevailing prices with a profit.

New York—Following the general revisions of last week, dealers' scrap prices have been steady. Fresh consuming demand remains light and in one important instance, that of a Claymont, Del., consumer, shipments are still being held up. On the other hand, a Pottstown, Pa., consumer has resumed taking shipments. Supplies appear light, as indicated by difficulty some brokers are now having in obtaining material against contract orders.

Canadian Scrap

Dealers' Buying Prices

MONTREAL

Per Gross Ton

Iron axles	$15.00
Steel axles	13.00
Car wheels	11.00
Stove plate	10.00
Wrought pipe	5.00
Turnings	6.00
Heavy melting steel	8.00

TORONTO

Steel axles	10.00
Iron axles	12.00
Heavy melting steel	9.00
Turnings	6.50
No. 1 mach. cast (net)	11.00
Malleable (net)	9.00

Buffalo—Tonnage sales of machine shop turnings and short shoveling turnings are reported, 3000 to 5000 tons being involved. The former was sold at $9.75 delivered to a Buffalo district point and the latter at $10.25. Both prices are slightly lower than those last quoted.

Cleveland—Trading in iron and steel scrap is dull. Only one local steelworks is taking scrap against contract and it has comparatively small tonnage outstanding. No new orders have been booked by dealers here in several weeks. Quotations continue unchanged for lack of a test. Local firmness is imparted by strength in the Valley. Shipments to that district continue in substantial volume.

Detroit—Production of iron and steel scrap is low and dealers with orders have had difficulty picking up tonnage. A leading automobile producer with a new model to work on, fears that it cannot fulfill its monthly contract. Heavy melting steel and compressed sheets are scarce and higher. Cast iron borings are a shade lower.

St. Louis—With quiet buying of iron and steel scrap, the market maintains a fairly firm undertone. Dealers are not disposed to sell ahead at present levels and railroads are getting decidedly firm prices. Melters have reduced stocks in many instances and are in need of tonnage, or shortly will be.

Birmingham, Ala.—Prices of scrap, both iron and steel, are tentative and shading is reported. Heavy melting steel is not reaching $12 but sales are not numerous.

Toronto, Ont.—Iron and steel scrap is practically unchanged. No revision has been made in prices and sales are at a minimum. Mills are taking small quantities of steel scrap, but there is little call for iron grades. Railways are offering large tonnages, much of which is being picked up by mills. Scrap is plentiful.

Philadelphia—Activity in steel and iron scrap comprises numerous small and moderate tonnages at unchanged prices.

Pittsburgh—Continued scarcity has strengthened steel and iron scrap and dealers are forced to pay higher prices in covering contracts. Mill buying is dull and some holdups still are effective. Heavy melting steel on the list of the Pennsylvania railroad brought about $15.75. With dealers unable to buy much below $15, this grade is quotable at $14.50 to $15.50.

Cincinnati—Quiet inquiry in the iron and steel scrap market indicates some consumers may soon be buying a fair tonnage. Quotations remain unchanged with dealers avoiding short sales. Heavy melting steel on railroad lists closing this week will be absorbed easily.

Coke

Leading Beehive Producer Entirely Suspended—Output Lowest Since 1922—Prices Steady

COKE PRICES, PAGE 94

Pittsburgh—Production of beehive coke is down to the lowest rate since 1922, with operations of the H. C. Frick Coke Co., the leading interest, entirely suspended. Demand still is light but no further decrease has been noted in the past week. Buying of furnace coke is almost entirely lacking, and shipments on contracts are steady at a reduced rate. Most producers are quoting $2.60, though this price lacks a test. Foundry coke demand is steady, but light, and prices are unchanged.

Production of coke in the Connellsville region for the week ended Aug. 2 was 19,000 tons, compared with 20,020 tons the preceding week, and 100,730 tons in the same period a year ago, according to the *Connellsville Courier*.

Boston—Demand for foundry coke has improved slightly. Retailers have stocked up and demand for domestic fuel has dropped. Prices are steady.

New York—Beehive furnace coke remains weak at $2.50, Connellsville, and standard grades of beehive foundry at $3.50 to $3.75, Connellsville. Premium brands of beehive foundry coke are $4.85, Latrobe, Pa. By-product foundry coke is $9 to $9.40, delivered Newark, N. J.; $11, New England; and $9, Philadelphia.

Cleveland—The market for foundry coke is quiet. Sales of domestic grades to dealers are fairly active. The Cleveland, Cliffs Iron Co. has taken over the sales agency for coke produced by the Corrigan, McKinney Steel Co.

Cincinnati—Demand for by-product foundry coke continues light. It is reported 300 tons of beehive furnace coke was offered in the territory as distress fuel at 25 cents under the regular price.

St. Louis—Demand for coke has dropped to the lowest point since last fall. Excessive heat is tending to curtail foundry operations. Prices are unchanged.

Birmingham, Ala.—Coke production is held down, though independents have all their ovens in operation. The leading interest has fewer units active than in some months. Little coke is being shipped from this district.

Sheet & Tube Mill Ready

Youngstown, O.—The new electric pipe mill of Youngstown Sheet & Tube Co. will be ready for operation in the first half of September. President Frank Purnell of Sheet & Tube said the merger trial is not interfering with the company's business, which is better in the pipe departments and looks more hopeful in the flat-rolling divisions.

Pacific Coast

Dull Conditions Rule but Fall Promises Fruition of Pending Projects — Cast Pipe Sales Equal Last Year's—Average Steel Sales 20 Per Cent of Last Year's Summer Volume

Seattle.—While general demand for steel products in the Pacific Northwest is fair, several important projects are being slowly developed, indicating increased volume during the fall. The power job at Rock Island, proposed pulp mills at Longview and Willapa Harbor and a large saw mill at Enumclaw all involve considerable tonnages of steel.

The average volume of sales in this territory is estimated at about 20 per cent less than during the corresponding period last year. Small tonnages predominate, with light shapes in better demand than heavy structurals. Little work involving the latter is up for immediate figures.

Bars, Plates and Shapes

Small tonnages rule, not many large jobs being up for immediate action. Local steel mills have a fair volume of business in lots of 50 tons or less with prospects favorable for increased turnover next month. No contracts of importance for reinforcing steel are pending. An unstated tonnage involved in the grain elevator addition for the port of Portland is reported booked by the Soule Steel Co. through Albertson & Cornell Bros., general contractors. Reinforcing prices are unchanged at 2.30c, merchant bars and shapes at 2.25c and plates are firm at a minimum of 2.15c.

Structural awards of the week were confined to one job, 114 tons for the Frying Pan bridge in Rainier national park, taken by Wallace Bridge & Structural Steel Co. through A. F. Berni, general contractor.

Chicago Bridge & Iron Works, through its Seattle office, received the contract for a 125,000-gallon steel water tank and tower for Port Orchard, Wash., involving about 60 tons. This job was won in competition with wood.

July volume of business, as reported by local wholesale jobbers, was about on a par with July, 1929. However, August is opening up slowly. Sheets are moving in fairly satisfactory volume and light plates are in fair demand. Other items are not active but jobbers anticipate a good fall turnover.

Pipe Inquiry Is Light

No large pipe projects are pending but dealers report some demand for small tonnages out of stock. This week the United States Pipe & Foundry Co. booked 131 tons of cast iron sewer pipe for a local improvement in Seattle, 60 tons for Nampa, Ida., and through the Atlas Foundry Co. 81 tons of 48-inch cast iron pipe for the new Tacoma steam power plant. American Cast Iron Pipe Co. booked 110 tons of 10 and 12-inch for Tacoma improvement project.

Old Materials

There is no change in market conditions. Steel scrap, mostly railroad material, is arriving in considerable volume at local mills where stocks are increasing. Prices range from $9.50 to $11, gross. Exporting houses are not active as demand in Japan is low. Cast iron scrap is inactive as foundries are buying only in small lots. The average price is nominally $12.50, net.

Coast Pig Iron Prices

Utah basic	$22.00 to 24.00
Utah foundry	22.00 to 24.00
*German	24.25
*Indian	22.00 to 24.00

*C.i.f. duty paid.

Pipe Has Best Tonnage

San Francisco—(*By Air Mail*)—Activity in Pacific Coast iron and steel markets this week was confined to unimportant tonnages. Little improvement in demand is noted and prices cannot be considered firm. Developments include award of 2000 tons of plates for a pipe line for Los Angeles, placed with the Western Pipe & Steel Co., and 1600 tons of structural shapes for the Procter & Gamble factory in Long Beach, Calif., taken by Consolidated Steel Corp.

Bars, Plates & Shapes

Most concrete bar awards involve lots of less than 100 tons. Bookings totaled 257 tons. The largest letting was taken by the Concrete Engineering Co. and called for 100 tons for an addition to a hospital in Redwood City, Calif. No new inquiries of importance came up for figures. No change in out-of-stock prices are noted in the San Francisco district, 2.50c, base, on carload lots, prevailing.

Consolidated Steel Corp. secured 800 tons of plates for boilers for a steam plant for the city of Los Angeles. Prices remain unchanged and range from 2.15c to 2.25c, c. i. f. coast ports.

The Minneapolis Moline Power & Implement Co. booked 150 tons for a Masonic Temple in Santa Ana, Calif., and the Consolidated Steel Corp. booked 600 tons for an addition to the Ford plant in Long Beach. Included among larger lots, on which bids were opened this week, were 1800 tons for a State building in Los Angeles, 450 tons for an addition to the Bank of Italy, San Francisco, and 400 tons for Pier No. 1, San Francisco. Plain shapes range from 2.15c to 2.25c, c. i. f.

Other Finished Material

Awards of cast iron pipe this week aggregated 1668 tons, largest in over six weeks, and brought the total to 51,422 tons for the year, compared with 50,352 tons for the corresponding period last year. The American Cast Iron Pipe Co. took 771 tons and the United States Pipe & Foundry Co. 260 tons for San Francisco. Glendale, Calif. will open bids Aug. 14 for 783 tons. The United States Pipe & Foundry Co. was low bidder on 226 tons for Whittier, Calif. Fresno, Calif. will open bids Aug. 15 for approximately 500 tons. Demand for standard steel pipe remains quiet. No pipe line inquiries of importance are up.

Movement of foundry pig iron and coke continues limited to lots of less than 100 tons.

Steel and Iron Census Shows Concentration

Concentration of the steel and iron industry in few centers is shown in a publication by the census bureau and issued by the bureau of foreign and domestic commerce of the department of commerce. It is the Market Data Handbook of the United States, and may be obtained from the superintendent of documents, Washington, for $2.50.

This shows there are 630 establishments, located in 253 counties of 30 states, engaged in some type of steel and iron manufacture. The surprising thing is that most of these plants are located in less than 50 counties of 15 states. There are 485 steelworks and rolling mills, 112 blast furnace establishments and 35 steel and iron processing plants, each of which manufactured commodities to the value of $5000 or more in 1927.

Steel, Wrought and Cast Iron Pipe, and Tubing

Welded Iron, Steel Pipe

Base Price $200 ton

Base Discounts on steel pipe, Pittsburgh and Lorain, O., to jobbers in carloads. Indiana Harbor, Ind., and Evanston, Ill., 2 points less. Chicago del., 2 points less. Wrought iron pipe, Pittsburgh base.

BUTT WELD

Steel In.	Blk.	Gal.	Iron In.	Blk.	Gal
⅛	58	44½	⅛	23	5
¼	62	50½	¾	28	11
1—3	64	52½	1 and 1¼	31	15
			1½ and 2	35	18

LAP WELD

2	57	45½	2	23	9
2½—6	61	49½	2½—3½	28	13
7—8	58	45½	4—6	30	17
9—10	56	43½	7 and 8	29	16
11—12	55	42½	9—12	26	11

BUTT WELD

Extra strong, plain ends

½	55	44½	¼ & ⅜	+13	+48
¾	60	49½	½	23	7
1—1½	62	51½	¾	28	12
2—3	63	52½	1—2	34	18

LAP WELD

Extra strong, plain ends

2	55	44½	2	29	13
2½—4	59	48½	2½—4	34	20
4½—6	58	47½	4½—6	33	19
7—8	54	41½	7 and 8	31	17
9—10	47	34½	9—12	21	8
11—12	46	33½			

To large jobbers these discounts on steel pipe increased on black by 1 point and two discounts of 5 per cent; on galvanized by 1½ points with two 5 per cents. On iron pipe large jobbers obtain additional discount of 1 point with 5 and 2½ per cent on black and galvanized.

BOILER TUBES

Carload Discounts, f.o.b. Pittsburgh

Lap Welded Steel		Charcoal Iron	
2—2¼	38	1¾	8
2½—2¾	46	2—2¼	13
3	52	2½—2¾	16
3¼—3¾	54	3	17
4	57	3¼—3½	18
4½—6	46	4	20
1½	1	4½	21

On lots of a carload or more, above base discounts subject to preferential of two 5 per cent discounts on steel and 10 per cent on charcoal iron. Smaller quantities subject to following modifications from base discounts.

Lap Welded Steel—Under 10,000 pounds, 6 points under base and one 5 per cent; on 10,000 pounds to carload, 4 points under base and two 5 per cents. Charcoal iron—under 10,000 pounds, 2 points under base; on 10,000 pounds to carload, base and one 5 per cent.

STANDARD COMMERCIAL SEAMLESS BOILER TUBES

COLD DRAWN

1	61	3	46
1¼—1½	53	3¼—3½	48
1¾	37	4	51
2—2¼	32	4½, 5, 6	40
2½—2¾	40		

HOT ROLLED

2—2¼	38	3¼—3½	54
2½—2¾	46	4	57
3	52	4½, 5, 6	46

Subject to 5 per cent supplementary discount for carload lots. On less than 10,000 pounds, base discount reduced 6 points. On 10,000 pounds to carload, base discount reduced 4 points and one 5 per cent allowed. No extra for lengths up to and including 24 feet. Sizes smaller than 1 inch and lighter than standard gage to be held at mechanical tubes list and discount. Intermediate sizes and gages not listed take price of next larger outside diameter and heavier gage.

SEAMLESS TUBING

Cold drawn; f.o.b. mill

Random lengths over 5 ft.....55%
Selected lengths, 1 to 18 ft.....53%

Cast Iron Water Pipe

Class B Pipe—Per Net Ton

Six-inch and over, Bir. $37.00 to 38.00
Four-inch, Birmingham 41.00 to 42.00
Four-inch, Chicago ..... 49.20 to 50.20
Six to 24-inch, Chicago 45.20 to 46.20
Six-inch and over, N. Y. 38.50 to 40.50
Four-inch, New York .... 41.50 to 42.50
Stand. fittings, Bir. base.... $100.00

Six to 24-inch, base; over 24-inch plus $20; 4-inch, plus $10; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe $4 higher than Class B.

Warehouse Quotations at Leading Centers, in Cents Per Pound

STEEL BARS

Baltimore	3.00c
Boston	3.265c
Buffalo	3.15c
Chattanooga	3.10c
Chicago	2.90c
Cincinnati	3.15c
Cleveland	2.85c
Detroit	3.00c
Houston	3.00c
Los. Ang.	3.40c
New York††	3.10c
Philadelphia	2.70c
Pittsburgh	2.75c
Portland	3.15c
San Frans.	3.40c
Seattle	3.15c
St. Louis	3.15c
St. Paul	3.15c
Tulsa	3.65c

IRON BARS

Baltimore	3.25c
Boston	3.265c
Buffalo	3.15c
Chattanooga	3.10c
Chicago	3.00c
Cincinnati	3.15c
Detroit	3.00c
New York††	3.10c
Philadelphia	2.70c
St. Louis	3.15c
Tulsa	3.65c

REINFOR. BARS

Baltimore	2.50c-3.31c
Boston	2.665c
Buffalo	2.95c
Chattanooga	3.10c
Cincinnati	3.15c
Cleveland	2.25c-2.44c
Detroit	2.30c-3.00c
Houston	3.00c
Los Ang. cl	2.40c
Los Ang. lcl	2.70c
New York	2.65c-3.10c
Philadelphia	2.55c
Pittsburgh	2.75c
San Fran. cl	2.30c
San Fran. lcl.	2.60c
Seattle	3.15c
St. Louis	3.15c
Tulsa	3.65c
Young.	2.30c-2.60c

SHAPES

Baltimore	3.00c
Boston	3.365c
Buffalo	3.25c
Chattanooga	3.20c
Chicago	3.00c
Cincinnati	3.25c
Cleveland	2.95c
Detroit	3.10c
Houston	3.25c
Los. Ang.	3.40c
New York	3.10c
Philadelphia	2.60c
Pittsburgh	2.85c
Portland	3.15c
San Fran.	3.40c
Seattle	3.15c
St. Louis	3.25c
St. Paul	3.25c
Tulsa	3.75c

PLATES

Baltimore	3.00c
Boston	3.365c
Buffalo	3.25c
Chattanooga	3.20c
Chicago	3.00c
Cincinnati	3.25c
Cleveland, ¼-in. and thicker	2.95c
Clev., 3/16-in	3.20c
Detroit	3.10c
Det., 3/16-in.	3.10c
Houston	3.00c
Los Angeles	3.40c
New York	3.30c
Philadelphia	2.60c
Pittsburgh	2.85c
Portland	3.15c
San Fran.	3.40c
Seattle	3.15c
St. Louis	3.25c
St. Paul	3.25c
Tulsa	3.75c

NO. 10 BLUE

Baltimore	3.50c
Bost. 3/16-in.	3.915c
Buffalo	3.50c
Chattanooga	3.75c
Chicago	3.35c
Cincinnati	3.45c
Cleveland	3.10c
Detroit	3.35c
Houston	3.90c
Los Ang.	3.95c
New York	3.40c
Portland	4.00c
Phila. *†	3.15c
Pitts.**	3.10c
San Fran.	3.80c
Seattle	4.00c
St. Louis	3.45c
St. Paul	3.545c
Tulsa	3.95c

NO. 24 BLACK

Balt. *†	3.75c
Boston	4.70c
Buffalo	4.20c
Chicago	4.05c
Cincinnati	4.05c
Clev. ***	3.75c
Detroit	3.95c
Los Ang.	4.70c
New York	3.55c to 3.65c
Phila. *†	3.70c
Pitts. **	3.65c
Portland	5.00c
San Fran.	4.35c
Seattle	5.00c
St. Louis	4.25c
St. Paul	3.79c
Tulsa	4.45c

NO. 24 GAL. SHEETS

Balt.*†	4.25c
Boston	5.45c
Buffalo	4.40c to 4.60c
Chicago (lc. del.)	4.60c
Chicago (outside shipment)	4.35c to 4.60c
Cincinnati	4.90c
Cleveland***	4.35c
Detroit	4.60c
Houston	5.40c
Los Ang.	5.10c
New York	4.25c
Phila. *†	4.25c
Pitts.**	4.20c
Portland	5.50c
San Fran.	5.00c
Seattle	5.50c
St. Louis	4.85c
St. Paul	4.58c
Tulsa	5.35c

BANDS

Baltimore	3.50c
Boston	4.015c-5.00c
Buffalo	3.50c
Chattanooga	3.30c
Chicago	3.10c
Cincinnati	3.35c
Cleveland	3.10c
Det. 3/16-in. & lighter	3.30c
Houston	3.65c
Los Ang.	4.30c
New York	3.40c
Philadelphia	3.00c
Pittsburgh	3.10c
Portland	3.50c
San Fran.	3.75c
Seattle	4.15c
St. Paul	3.35c
Tulsa	3.85c

HOOPS

Baltimore	3.50c
Boston	5.50c-6.00c
Buffalo	3.90c
Chicago	3.65c
Cincinnati	3.90c
Cleveland	3.65c
Det. No. 14 & lighter	3.80c
New York	3.75c
Philadelphia	3.25c
Pittsburgh	4.10c
Seattle	5.15c
St. Paul	3.90c

COLD FIN. STEEL

Rounds & Hexagons

Baltimore (c)	3.30c
Boston	3.50c
Buffalo	3.15c
Chattanooga*	3.85c
Chicago	3.35c
Cincinnati	3.80c
Cleveland	3.40c
Detroit	3.65c
Los Ang. (a)	4.50c
New York	3.50c
Philadelphia*	3.40c
Pittsburgh	3.35c
Portland (a)	4.50c
San. Fran.(a)	4.25c
Seattle (a)	4.75c
St. Paul (a)	3.85c
St. Louis	3.60c
Tulsa	4.75c

Flats and squares 50c extra, except Tulsa, where 5.14c is quoted. (a) Rounds, hex. only.

COLD ROLL. STRIP

Boston 0.100-in 500 lbs. lots	5.30c
Buffalo	5.65c
Chicago (soft) (b)	6.15c
Cincinnati	6.10c
Clev. (b)	5.95c
Detroit	5.40c
New York	5.05c
Phila. (c)	4.95c

(b) Net base, straightening, cutting, boxing 1 ton or more. (c) Plus mill, size and quantity extras.

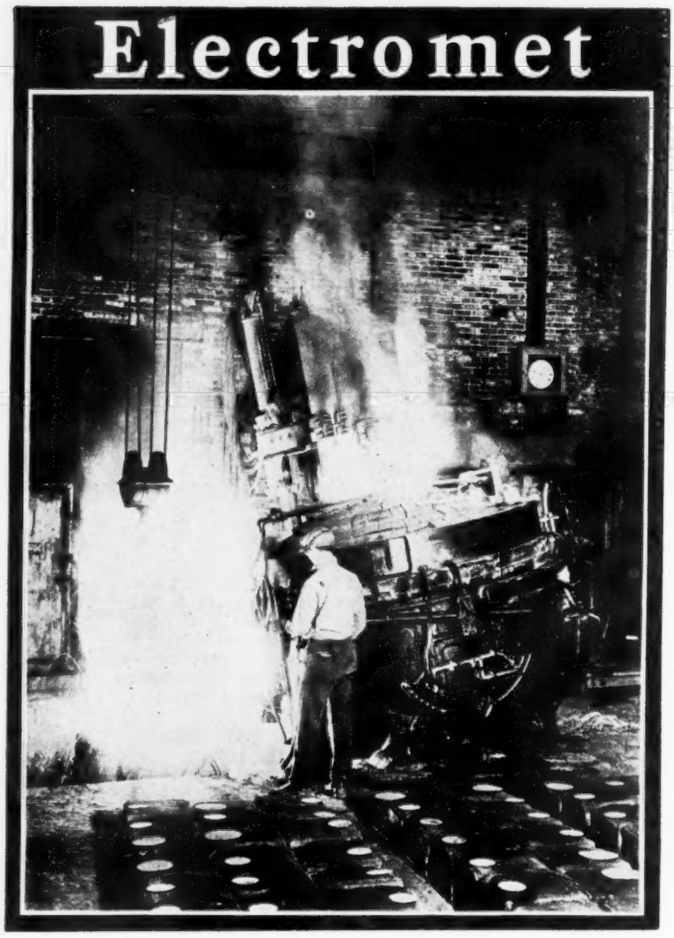
††Domestic bars.
*Plus quantity extras.
**Less than 25 sheets.
*†50 or more bundles.
***Less 0.15c where more than 10 bundles are ordered at once for delivery at one time.

CHROMIUM

High Carbon Ferrochrome (maximum 6% carbon)
Low Carbon Ferrochrome (in grades, maximum 0.06% to maximum 2.00% carbon)
Chromium Metal
Chromium-Copper
Miscellaneous Chromium Alloys

MANGANESE

Standard Ferromanganese 78 to 82%
Low Carbon Ferromanganese
Medium Carbon Ferromanganese
Manganese Metal
Silico-Manganese
Manganese-Copper
Miscellaneous Manganese Alloys



SILICON

Ferrosilicon 15%
Ferrosilicon 50%
Ferrosilicon 75%
Ferrosilicon 80 to 85%
Ferrosilicon 90 to 95%
Refined Silicon (minimum 97% Silicon)
Calcium-Silicon
Calcium-Aluminum-Silicon
Calcium-Manganese-Silicon
Silicon-Copper
Silico-Manganese
Miscellaneous Silicon Alloys

VANADIUM

All Grades

ZIRCONIUM

Silicon-Zirconium
Zirconium-Ferrosilicon

Better Machining Properties of Steel Treated with Zirconium

Steel castings that require extensive machining must possess a uniform texture free from hard spots and porosity to pass inspection. Zirconium, used in their production, greatly improves these physical characteristics by its scavenging action on dissolved gases and oxides.

Experiments extending over several years have proven the advantages of zirconium for this purpose, and greater ease of machining has been obtained consistently when this alloy is used.

Machine shop foremen appreciate the difference in such castings and will be able to turn out better work with less trouble. Our engineers will be glad to explain the proper procedure in the use of this alloy and advise you further of other particular benefits.

Electromet Ferro-Alloys & Metals

Sole Distributors

ELECTRO METALLURGICAL SALES CORP.

Unit of Union Carbide UCC *and Carbon Corporation*

30 East 42nd Street, New York, N. Y.

Mill Products

Base price cents per pound f.o.b. mill, except otherwise specified. Copper and brass product prices based on 11.50c, del., Conn. for copper

Sheets	
Yellow brass (high)	17.87½
Copper, hot rolled	20.75
Lead, full sheets (cut ½c more)	9.00
Zinc sheet (100-lb. base)	9.50
Tubes and Pipes	
Seamless yellow brass (high)	22.75
Seamless copper	23.00
Rods	
Yellow brass (high, full turnings)	16.12½
Naval brass	19.00
Anodes	
Copper, untrimmed	18.25
Wire	
Yellow brass (high)	18.37½

Old Metals

Dealers' buying prices, cents lb.

Heavy Red Brass	
New York	7.25 to 7.50
Chicago	7.00 to 7.50
Cleveland	7.50 to 8.00
St. Louis	7.00 to 7.50
Heavy Yellow Brass	
Cleveland	4.50 to 5.00
Heavy Copper and Wire	
New York	8.50 to 8.75
Boston	8.50 to 8.75
Chicago	8.75 to 9.00
Cleveland	8.00 to 8.50
St. Louis	7.50 to 8.00
Red Brass Borings	
New York	6.75 to 7.25
Yellow Brass Tubing	
Cleveland	4.50 to 5.00
Light Copper	
New York	7.00 to 7.50
Chicago	6.75 to 7.00
Cleveland	7.00 to 7.50
St. Louis	7.00 to 7.50
Light Brass	
Boston	4.00 to 4.25
Chicago	4.50 to 5.00
Cleveland	3.50 to 4.00
St. Louis	4.00 to 4.50
Zinc	
New York	2.25 to 2.50
Cleveland	1.50 to 1.75
St. Louis	2.00
Aluminum	
Clippings, soft, Cleveland	12.00 to 13.00
Clippings, hard, Cleveland	8.50 to 9.00
Borings, Cleveland	4.50 to 5.00
Cast, Cleveland	7.00 to 7.50
Cast, Boston	7.50 to 8.00
Cast, St. Louis	7.50

Secondary Metals

Remelt aluminum No. 12	15.00
Brass ingot, 85-5-5-5	11.00

Metals

Current Sales and Specifications Reflect Midsummer Dullness—Fall Pickup Expected

New York — While metal business is expected to improve in September, current sales and specifications continue to be dominated by midsummer dullness. Purchases of various metals have fallen off. This is true of lead and antimony, the most recently strong markets, while copper and zinc have become more quiet than ever. Some further curtailment in output of metals has been effected all along the line, but it has been of a minor character.

Copper—New business, both in the domestic and export markets, has been extremely light. Little business has been done for relatively early shipment, and some business offered for November and December has been turned down by certain producers though other producers are willing to sell in a limited way through the rest of the year. Copper wire mills continue to operate at relatively high rates but other mills are not doing much better than half of capacity. Some mills report their customers are beginning to show more interest in forward requirements. Prices remain steady on the various grades of copper and copper products on the basis of 11.00c, Connecticut.

Zinc—Prime western has reacted from 4.75c, East St. Louis, to 4.30c. The recent buying movement was based on the reluctance of sellers to do much at the extremely low level near 4.00c, and on the poorly covered position of consumers. After consumers had covered their reduced future needs, producers still had extraordinarily large stocks, so that with some of them wanting further sales, the market has slipped back almost as rapidly as it went up.

Tin — Consumers have bought moderately to cover nearby needs, but the market as a whole has been quiet. In some instances it is believed consumers have bought more spot and nearby than they actually need, as it is cheaper to buy spot, and pay interest, with futures at premiums, than to buy the latter. The market has been remarkably steady, a little above 30 cents a pound lately.

Aluminum—New business continues quiet but prices are steady. Consumption has changed little.

Antimony—This market went up rapidly the past few weeks and now has been easing off a little.—*Daily Metal Trade.*

Coke By-Products Quiet; Sulphate Prices Out Soon

New York—Sellers of sulphate of ammonia are planning to announce within the next fortnight contract prices to the fertilizer trade for the ensuing season. Meanwhile, demand is quiet within the domestic market at $1.90 per 100 pounds, delivered. Resumption of activities in the automotive industry is expected to be reflected in the market for light oil distillates soon.

Coke By-Products

Per Gallon, Producers' Plants, Tank Lots	Spot
Pure benzol	$0.21
90 per cent benzol	0.21
Toluol	0.30
Solvent naphtha	0.25
Commercial xylol	0.25
Per Pound at Producers' Plants in 250-Pound Drums	
Phenol	0.15 to 0.16
Per Pound at Producers' Plants	
Naphthalene flakes	0.04½ to 0.05½
Naphthalene balls	0.05½ to 0.06½
Per 100 Pounds Delivered	
Sulphate of ammonia	$1.90 to $2.00

Mercury $118.50 to $119

New York—Quicksilver is $118.50 to $119, and moderately active.

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Straits Tin New York Spot	Straits Tin New York Futures	Lead N. Y.	Lead East St. L.	Zinc St. L.	Aluminum 98-99%	Spot Antimony	Ingot Nickel
Aug. 6	11.00	11.07½	10.87½	30.10	30.50	5.50	5.35	4.45	22.90	8.00	35.00
Aug. 7	11.00	11.07½	10.87½	30.20	30.65	5.50	5.35	4.40	22.90	8.00	35.00
Aug. 8	11.00	11.07½	10.87½	30.15	30.60	5.50	5.35	4.35	22.90	7.90	35.00
Aug. 9	11.00	11.07½	10.87½	.....	.....	5.50	5.35	4.35	22.90	7.87½	35.00
Aug. 11	11.00	11.07½	10.87½	30.12½	30.55	5.50	5.35	4.30	22.90	7.80	35.00
Aug. 12	11.00	11.07½	10.87½	30.00	30.50	5.50	5.35	4.30	22.90	7.87½	35.00

Europe

Steel Contracts for Colonies Are Placed— Lower Prices Help Orders—Pig Iron Reduced

Birmingham, Eng.—The Crown agents for the Colonies have recently placed several large contracts for steel with Middlesbrough firms. In connection with construction of a new erecting shop at the locomotive, carriage and wagon workshops of the Ceylon Government railway at Ratmanala, Dorman Long & Co. are supplying 836 tons of steel. The Teesside Bridge & Engineering Works of Middlesbrough are supplying the steelwork for a new stores building at the same workshops. Smaller contracts for Jamaica and Malaya have been placed with Teesside firms.

Close Bidding Cuts Prices

In the Midland district demand for steel is moderate. Passenger and freight car builders are engaged on contracts placed months ago for which steel has been ordered in advance. The outlook for them is not encouraging and consequently they are not placing much new business with steelworks. Structural work is just sufficient to keep works going without pressure. But competition for this class of work is keen even for the smallest contracts. The same applies to electric work which is going on under the electricity commissioners' schemes in various parts of England. Electrical engineers state that while the commissioners have a good deal of business to place the number of contractors in the trade results in underbidding and prices consequently are cut to the bone.

In the steelmaking district in Sheffield it is stated that rolling mills have not been so quiet for years. Output was increased at an open-hearth steel works at the beginning of the month but as there are not enough orders to absorb the whole of it one or two furnaces may have to be put out next week. Orders and deliveries are being curtailed owing to the holidays. In the Barrow district plants are not working at full capacity and rail mills at Barrow have suspended operations. In the West of Scotland holidays are coming to an end and it is hoped to make a good start in a week's time.

Lower Prices Increase Sales

The cut in Continental steel prices has stimulated some business among Birmingham merchants. Small bars are selling at £5 13s ($27.50) delivered in the district but they have been as low as £5 11s ($27.02). Definite reductions by the cartel in regard to billets and sheet bars have merely given official confirmation to the discounts offered by foreign works a week ago. Whether the present basis prices will be adhered to, however, is another matter. No. 3 Belgian iron bars can be had at £5 13s ($27.50), but there is little call for this iron. Midland merchants formerly did some trade in this material but users have in many cases changed from iron to steel.

The feature of the Birmingham market this week has been the reduction of 2s 6d ($.61) in pig iron. It follows closely upon the drop of a similar amount at quarter day three weeks previously. The effect of this reduction upon buying cannot be judged until autumn trading begins. The annual shutdown of works takes place August 4 to 11 and the market is always dull practically the whole of that month. During the last few weeks pig iron buying has been practically at a standstill. Iron founders have adopted an attitude of resistance to the association of furnacemen and the situation has amounted to a tug-of-war between consumers and producers. Deliveries against existing orders have been suspended and customers who usually buy in 1000-ton lots have been satisfied to clear every pig from the yard and even then take only ten tons as a precautionary measure. The recent reduction will now assist business if the tide turns in the autumn. The threat of Continental competition in pig iron has been hanging over furnaceman and no doubt has influenced the course of events. Little foreign iron has been bought as the price at Antwerp has never fallen to a point at which it would be possible advantageously to bring the material to Midland works. Birmingham merchants, however state that they were actually offered business of this kind had they been open to sell below the zone prices for Midland material.

Await Lower Tin Plate

Marked bar mills in South Staffordshire are closing for a week, not because of shortage of orders but through necessity of keeping plant in working trim. Mills have had an unbroken run in the first half and are likely to maintain this activity until Christmas. Other ironworks in the main are closing down.

In galvanized sheets prices are unchanged and work is being resumed in some cases after about three days' holiday. While spelter is firming up sheet bars from the Continent are down to £5 5s ($25.56) and it seems likely that this will influence the selling price of galvanized sheets. Welsh tin plates are not selling freely although a number of makers have good order books for third quarter. It is assumed that buyers are holding off the market in anticipation of a break in the basis price of 18s ($4.39) per box, as a sequel to the reduction in Continental steel.

Competition More Varied in European Markets

London — (*By Cable*) — Business in the iron and steel markets continues dull. Pig iron demand and exports are extremely limited. Hematite stocks are estimated 100,000 tons. Continental billets are offered at £5 5s ($25.51), delivered in the Birmingham district. Some tonnage has been ordered. Dorman, Long & Co. have booked a contract for building a bridge over the Nile. Scotland is importing pig iron from India and the Continent. British sheet mills are restarting, but demand for tin plate is quiet. Practically no change is noted in the European situation. Activity in Brussels has lapsed after a slight spurt at the end of July. Pig iron from England and the Saar is competing in France. Some activity is noted in building construction in Germany. Two orders for locomotives and boiler tubes have been received in Germany from India.

Output of Germany Shrinks

Berlin—A further drop in iron and steel output figures was registered in Germany in June. The number of furnaces operating June 30 was 79, against 86 March 31 and 95 Jan. 1. With the exception of the Ruhr strike period at the end of 1928, the June production of pig iron was the lowest recorded since June, 1926, and the number of furnaces in operation at the end of June was the lowest since March, 1926.

June production of raw steel is the lowest registered since February, 1926, with the exception of the Ruhr

SUBJECT TO HIS APPROVAL

Time—That Tough Old Tester of everything in this world—writes the final "Okay" on the materials that make up any structure.

For Time alone can tell whether those materials are worthy—serving faithfully through the years, or causing trouble and expense long before completing their expected life-span.

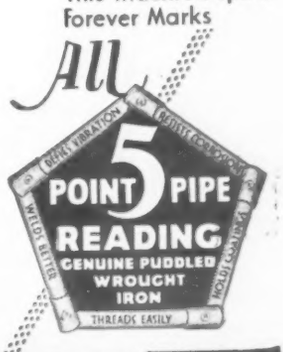
In the important matter of piping, so vital to permanence, Time has spoken clearly. His verdict—today as eighty years ago—is Genuine Puddled Wrought Iron for lasting pipe economy and satisfaction. No other pipe material has proved so successful in withstanding all the attacks of Time and his destructive henchmen—corrosion, vibration, leaky joints and the rest.

Reading 5-Point Pipe is made of Genuine Puddled Wrought Iron, that rust-resisting, strain-defying metal of the ages. That is why you can specify Reading 5-Point Pipe with the confidence that it will outlast ordinary pipe two to one, and probably five to one!

READING IRON COMPANY, Reading, Pennsylvania

Use only Reading 5-Point Nipples with Reading 5-Point Pipe—you'll know them by the indented spiral band

For Your Protection This Indented Spiral Forever Marks All



GENUINE PUDDLED WROUGHT IRON
READING PIPE
DIAMETERS RANGING FROM ⅛ TO 20 INCHES

Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron

strike period. Comparisons follow, in metric tons:

Mon. ave.	Pig iron	Steel ingots and castings	Finished steel
1913*	909,640	993,640	970,240
1927	1,091,875	1,359,225	1,069,930
1928	984,700	1,209,770	880,690
1929	1,116,730	1,353,820	940,425
1930			
Jan.	1,092,206	1,275,023	896,076
Feb.	964,517	1,176,435	797,899
March	1,007,576	1,201,206	834,349
April	901,358	1,033,383	787,355
May	859,657	1,034,088	735,741
June	767,395	859,310	603,378

*Present boundaries.

French Mine Less Ore

Paris—Production of iron ore in France in April fell off from that of March, and stocks at mines April 30 were smaller than on March 31. Comparisons follow:

Mon. ave.	Production	Stocks at end of month
1913	1,826,500	.....
1927	3,723,200	.....
1928	4,109,780	.....
1929	4,252,470	.....
1930		
Jan.	4,567,511	2,680,461
Feb.	4,132,962	2,779,536
March	4,336,932	2,851,347
April	4,008,353	2,836,072

French Production Drops

Paris—A sudden drop in the number of blast furnaces operating in France was registered in June, and production was sharply reduced. The output of steel ingots and castings in June was the lowest since November, 1927, and included 748,000 tons of ingots and 22,000 tons of steel castings. Comparisons follow, in metric tons:

Mon. ave.	Act. Fur. on last day	Pig iron	Steel ingots and castings
1913	131	433,940	390,580
1927	142	774,785	689,610
1928	153	841,415	782,995
1929	156	870,000	805,500
1930			
Jan.	156	875,000	800,000
Feb.	154	815,000	772,000
March	152	898,000	848,000
April	153	854,000	787,000
May	154	899,000	853,000

German Trade Is Active

Berlin—Foreign trade of Germany in May was more active than in April, both imports and exports being in larger volume, with exports showing the larger gains. Comparisons follow:

	— Imports —		— Exports —	
Mon. ave.	Pig iron and ferro-alloys	Other iron and steel	Pig iron and ferro-alloys	Other iron and steel
1927	23,895	217,505	29,910	347,645
1928	25,535	174,250	24,585	394,575
1929	14,765	137,435	36,115	448,330
1930				
Jan.	22,004	105,127	33,153	488,245
Feb.	13,597	98,397	24,271	409,822
March	16,777	107,401	25,983	465,166
April	12,032	113,195	18,364	405,633
May	16,070	114,548	23,164	439,791

France Has Less Trade

Paris—Exports of pig iron and other iron and steel products from France in May showed further decline. Imports in May were lower except a small increase in pig iron. Comparisons are as follows:

Mon. ave.	Pig iron	Other iron and steel products	Pig iron	Other iron and steel products
1927	3,230	7,440	69,640	404,730
1928	3,365	8,320	52,215	368,410
1929	3,345	15,100	46,760	279,610
1930				
Jan.	11,806	22,374	44,016	259,133
Feb.	20,463	24,965	44,977	297,208
March	16,747	28,024	42,522	269,752
April	15,195	25,347	41,630	277,886
May	15,803	23,020	39,576	263,606

Belgian Output Is Low

Brussels—Iron and steel production figures for Belgium during June reached a low level, not equaled since February, 1926. Comparative figures follow, in metric tons:

Mon. ave.	Act. Furn.	Pig iron	Steel ingots and castings	Finished steel
1913	....	207,055	205,550	154,920
1927	....	312,620	309,040	255,185
1928	....	325,445	327,870	281,125
1929	58	341,330	344,370	296,370
1930				
Jan.	58	343,380	340,200	296,220
Feb.	57	315,320	321,480	271,430
Mar.	57	341,820	359,150	258,770
April	56	313,250	312,550	252,150
May	54	299,510	294,160	240,900
June	51	265,290	252,680	204,590

More Steel Ships Building

American shipyards July 1 had under contract or were building for private owners 263 steel vessels of 475,903 gross tons, which compared with 251 vessels of 477,053 tons as of June 1, according to the bureau of navigation, department of commerce.

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, August 11	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable		£ s d		£ s d		£ s d		£ s d
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$16.44	3 7 6*	$14.61	3 0 0	$14.61	3 0 0	$14.61	3 0 0
Basic-bessemer	15.95	3 5 6†	13.39	2 15 0	13.39	2 15 0	13.39	2 15 0
Hematite, Phosphorus 0.02-0.05	17.29	3 11 0	24.82	630*	.....	.....	17.78	3 13 0
SEMIFINISHED STEEL								
Billets	$28.25	5 18 6	$21.18	4 7 0	$21.18	4 7 0	$21.18	4 7 0
Wire rods	41.40	8 10 0	30.44	6 5 0	30.44	6 5 0	30.44	6 5 0
FINISHED STEEL								
Standard rails	$40.18	8 5 0	$31.66	6 10 0	$31.66	6 10 0	$31.66	6 10 0
Merchant bars	1.74c	8 0 0	.99c	4 10 0	.99c	4 10 0	.99c	4 10 0
Structural shapes	1.68c	7 15 0	1.06c	4 16 0	1.06c	4 16 0	1.06c	4 16 0
Plates, ship, bridge and tank	1.79c	8 5 0	1.19c	5 8 6	1.19c	5 8 6	1.22c	5 10 6
Sheets, black 24 gage	2.17c	10 0 0	2.09c	9 9 9	2.09c	9 9 9	2.06c	9 7 6
Sheets, galvanized, 24 gage, corrugated	2.47c	11 7 6	2.46c	11 3 9	2.46c	11 3 9	2.97c	13 10 0
Bands and strips	2.17c	10 0 0	1.10c	5 0 0	1.10c	5 0 0	1.10c	5 0 0
Plain wire, base	2.06c	9 10 0	1.46c	6 12 6	1.46c	6 12 6	1.43c	6 10 0
Galvanized wire, base	3.04c	14 0 0	1.57c	7 2 6	1.57c	7 2 6	1.57c	7 2 6
Wire nails, base	2.39c	11 0 0	1.38c	6 5 0	1.38c	6 5 0	1.38c	6 5 0
Tin plate base box 108 pounds	$ 4.38	0 18 0	.....	.....	.....	.....	$ 9.01	1 17 0

*France

Domestic Prices at Works or Furnace—Last Reported			Francs		Francs		Marks	
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$16.44	3 7 6	$19.31	490(2)	$17.08	610	$19.84	83
Basic pig iron	15.95	3 5 6	20.69	525(1)	13.44	480	21.15	88.50
Furnace coke	3.17	0 13 0	6.62	168	5.74	205	5.14	21.50
Billets	28.85	5 18 6	23.44	595	21.00	750	28.08	117.50
Standard rails	1.79c	8 5 0	1.46c	810	1.62c	1,245	1.47c	136
Merchant bars	1.74c	8 0 0	1.12c	620	1.11c	850	1.48c	137
Shapes	1.84c	8 10 0	1.26c	700	1.22c	940	1.45c	134
Plates, ship, bridge and tank	1.95c	9 0 0†	1.46c	810	1.37c	1,050	1.65c	153
Sheets, black, 24 gage	2.28c	10 10 0	2.72c	1,510	2.18c	1,675	1.36c	126
Sheets, galvanized 24 gage, corrugated	2.58c	11 17 6	3.52c	1,955	2.60c	2,000	3.67c	340
Plain wire	2.06c	9 10 0	2.03c	1,125	2.15c	1,650	2.34c	217
Bands and Strips	2.17c	10 0 0	1.33c	740	1.50c	1,150	1.72c	159

*Middlesbrough; †Basic; ‡delivered; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 13s 0d ($3.17) f. o. b. Ferromanganese £19 6s 0d ($93.99) delivered Atlantic seaboard, duty paid. German ferromanganese £12 5s 0d ($59.66) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel. French, Belgian, Luxemburg, and German are for basic-bessemer steel.

SAFE... *from the start*

ABILITY to withstand extraordinary punishment is well demonstrated by this photograph of two boiler header sections manufactured from Pittsburgh Seamless Steel Tubing. The highest grade steel, possessing superior ductility and toughness, is essential in this manufacturing process. Weldless and pitless walls are also necessary to prevent any starting points for corrosion.

Heavy-duty Pittsburgh Seamless fulfills all these requirements. In fact there is a grade of Pittsburgh Seamless to fill almost *every* requirement for fabricated tubing and piping, no matter how unusual or exacting that requirement may be. Complete control of manufacture, from the ore to the finished pipe or tube, enables us to give special attention to individual needs and to furnish uniformly dependable tubing and piping for every purpose.

Pittsburgh Steel Products Co.

Division of

Pittsburgh
New York
Detroit

Pittsburgh Steel Co.

Chicago
St. Louis
Tulsa

Houston

Boiler Header Sections forged from round Pittsburgh Seamless Steel Tubing by the Hedges-Walsh-Weidner Division of the Combustion Engineering Company, Chattanooga, Tenn.

Pittsburgh P Seamless

PIPE AND TUBING

Machinery

MACHINE tool buying on the part of shipyards, and a big order for overhead cranes from the New York board of transportation are the week's only bright spots in the otherwise drab picture of equipment market conditions in the East. Middle Western machine tool builders find solace in the fact that in some cases they can show small profits while others show deficits. Foreboding over the effect of continued drought upon farmer buying power probably accounts for the lack of expected interest in equipment buying by large builders of agricultural machinery.

New York—Machine tool buying has shown little improvement over the July rate, which, according to some leading sellers, was the lowest here in years. Some activity is noted among the ship yards. Newport News Shipbuilding & Dry Dock Co., Newport News, Va., New York Shipbuilding Co., Camden, N. J.; and the Federal Shipbuilding Co., Kearny, N. J., are in the market for scattered items. But with the electrical companies, the railroads and the automotive and aeronautical companies all virtually out of the market, dullness is profound. Amtorg Trading Corp. has been one of the large buyers of late, placing orders among several manufacturers for machinery for Russia. Terms of payment cover the greater part of 12 months.

Meanwhile prices are showing little change, and, with much of present day demands for special equipment, there is little disposition among builders to lay in stocks. Most sellers here look for continued dullness over the next 30 days or so.

One of the largest overhead crane orders in some time is reported to have been placed by the board of transportation for its 207th street shops. This involves 16 cranes ranging from 3 to 30 tons capacity, the spans ranging from 16 to approximately 74 feet. The contract is reported to have gone to Milwaukee Electric Crane & Mfg. Corp. An 18-ton locomotive crane also is understood to have been placed. A list of 27 handpower cranes, ranging from 1½ to 10 tons capacity has been placed by the Austin Co., Cleveland, with the Armington Engineering Co., and two 10-ton electric cranes by the Brooklyn & Queens Transit Co., Brooklyn, this latter going to the Box Crane & Hoist Corp. Chesapeake & Ohio has closed on a 30-ton pile driver crane to Browning Crane Co.

Worcester, Mass.—The machinery market is still without any definite trend. Some inquiry is still open, but the continued difficulty in closing sales keeps production at a low level. The absence of large lists is a discouraging feature of the market. Some producers are confident that fall will bring a resumption of business. The revival of the automobile industry is being watched with keen interest.

Chicago—Machine tool dealers are convinced that little business is likely to be closed this month. Prospects are less favorable than at the beginning of the month. Chicago board of education at a meeting Aug. 27 may award 18 lathes, shapers, six upright drills, bench drills, milling machines and grinders for the Austin high school. It is not expected that the Chicago district steelworks, which is inquiring for a number of tools for its expansion program at South Chicago and Gary, will close on these soon. Not much other inquiry has appeared. International Harvester Co. will place a few additional tools for its Chicago and Milwaukee plants, but usually the implement and tractor companies are decidedly uncertain as to the future. A number of inquiries are out for used tools. Reports from the Detroit district are that no immediate inquiry is to be expected from the automotive plants. There was a suspension in business activity late last week, when the Chicago machine tool dealers were holding a golf tournament.

Cleveland—Several of the machine tool builders here are willing to admit that their business has taken a slight upswing as compared to the dead low level of July. The fact that the Cleveland district is in the drought belt brings the seriousness of this condition forcibly home to local manufacturers, and eventually to machine tool builders and dealers.

Employment bureaus report a continued demand for high-grade tool and machine designers, although they stress the point that the available supply of such talent far exceeds the demand. It is evident that Cleveland machine tool builders foresee a highly competitive market as soon as business revives, and are preparing to meet it with new designs, embodying magazine feeds and other improvements in the direction of automatic operation.

Revelations in recent business reports of the sharp slump in earnings of machine tool companies, and the fact in many cases dividends have not been earned have served to depress such stocks. Comparison proves, however, that while Cleveland builders are showing small earnings, similar companies elsewhere are reporting heavy deficits, in many instances.

Eleven Steel Mills Work Month Without Accident

Eleven plants of the American Sheet & Tin Plate Co., Pittsburgh, operated throughout June without a lost-time accident, as shown by reports just compiled. The Pennsylvania tin mill, New Kensington, Pa., in June completed 365 days without a lost-time accident. The list of plants, and the number of operatives in June follows: Cambridge tin mill, Cambridge, O., 315; Dover sheet mill, Dover, O., 420; Guernsey sheet mill, Cambridge, O., 517; Leechburg sheet mill, Leechburg, Pa., 146; New Philadelphia sheet mill, New Philadelphia, O., 411; Roll and machine works, Canton, O., 238; Pennsylvania tin mill, 441; Sabraton tin mill, Morgantown, W. Va., 425; Shenango tin mill, New Castle, Pa., 1660; Wood sheet mill, McKeesport, Pa., 535; American tin mill, Elwood, Ind., 1108.

Steel Founders Announce Two Fall Meetings

According to an announcement just made, the Steel Founders' Society of America Inc. will hold its next regular meeting at the William Penn hotel, Pittsburgh, Sept. 10-11. The October meeting is scheduled for Hotel Pennsylvania, New York, Oct. 23, the day preceding the fall meeting of the American Iron and Steel institute. Granville P. Rogers, 932 Graybar building, New York, is managing director of the society.

Prof. Roy O. McDuffie, University of Cincinnati has been named chairman of the Cincinnati chapter of the American Society for Steel Treating for 1930-31. Other officers are: Vice Chairman, N. M. Salkover, Queen City Steel Treating Co.; and secretary-treausrer, N. C. Strohmenger, Tool Steel Gear & Pinion Co.

Construction and Enterprise

CONCISE, TIMELY BUSINESS BUILDING OPPORTUNITIES IN FIELD OF INDUSTRY

New England

EAST HARTFORD, CONN.—United Airports of Conn. Inc., United Aircraft subsidiary, will develop a 140-acre airport here. Contract has been awarded to C. C. Kirby.

FAIRFIELD, CONN. — McKesson & Robbins, 91 Fulton street, New York, chemical manufacturers, have awarded contract to T. J. Pardy Construction Co., 1841 Seaview avenue, Bridgeport, Conn., for a plant estimated to cost $50,000.

TORRINGTON, CONN.—Plant of Torrington Castings Co., operator of a brass foundry, recently was virtually destroyed by fire. Estimated loss, $20,000.

BOSTON—Grecian & Roman Art Iron Co., manufacturing wrought iron furniture and fixtures, New England Casket Co., manufacturing metal and wood caskets, and Metal Craft Screen Mfg. Co., manufacturing metal rolling screens, are new firms starting production. All can be reached through the chamber of commerce or New England Council, 1032 Statler building.

EVERETT, MASS.—Mystic Iron Works, 250 Stuart street, Boston, will build a boiler house addition on Dexter street here. Plans are private. Cost will approximate $40,000.

LEXINGTON, MASS.—Boiler house unit will be included in a proposed greenhouse project by E. J. Baskin. Total cost, $40,000. Plans are private.

NORWOOD, MASS. — Massachusetts Air Terminal & Arena, H. E. Shaw trustee, proposes an airport development here and in Dedham and Canton, Mass., at a total cost of $1,000,000. C. Kenniston, engineer, Verne Inn, Norwood, Mass., has started taking bids on conditioning of the field.

WALTHAM, MASS.—Main plant of Davis & Farnum Foundry Co. recently was virtually destroyed by fire. Loss is estimated at $40,000.

BARTON, VT.—Village is receiving bids for improvements to municipal light and power plant. I. W. Jones & Co., Milton, N. H., is engineer. Cost is estimated at $40,000.

New York

FARMINGDALE—M. & F. Aero Equipment Co. has been incorporated with $25,000 capital by A. A. Arnold, Lindenhurst, N. Y., to deal in aircraft accessories.

LEROY—Lapp Insulator Co. Inc. has awarded contract to H. K. Ferguson Co., Hanna building, Cleveland, for a 1-story plant.

NEW YORK—Plant of Capital Lighting Fixture Co. Inc., 103 Mott street, recently was damaged by fire, at a loss of about $14,000.

NEW YORK—Durable Metal Products Corp., manufacturer of metal novelties, 466 West Broadway, recently suffered fire loss.

NEW YORK—Cole Standard Grip-Nut Corp. has been incorporated with 200 common shares by B. M. Langstaff, 120 Broadway, to deal in machinery parts.

OSWEGO—International Nu-Typ Tool Corp. has been incorporated with $382,500 capital by Hancock, Door, Kingsley & Shove, Syracuse, N. Y., to operate a machine shop.

SYRACUSE — Rollway Bearing Co. Inc., 541 Seymour street, has a permit to remodel a plant unit at a cost of $2000.

Pennsylvania

MEADVILLE — Champion De-Arment Tool Co., manufacturer of precision tools and equipment, has awarded contract for a plant addition, 50 x 80 feet.

MIDLAND—Millwright shop and blast furnace department of the Midland plant of Pittsburgh Crucible Steel Co., Oliver building, Pittsburgh, recently was severely damaged by fire.

PHILADELPHIA—Boiler house and storage building of Manhattan Cleaners & Dyers, 267 South Sixty-second street, recently were damaged by fire. Loss, approximately $10,000.

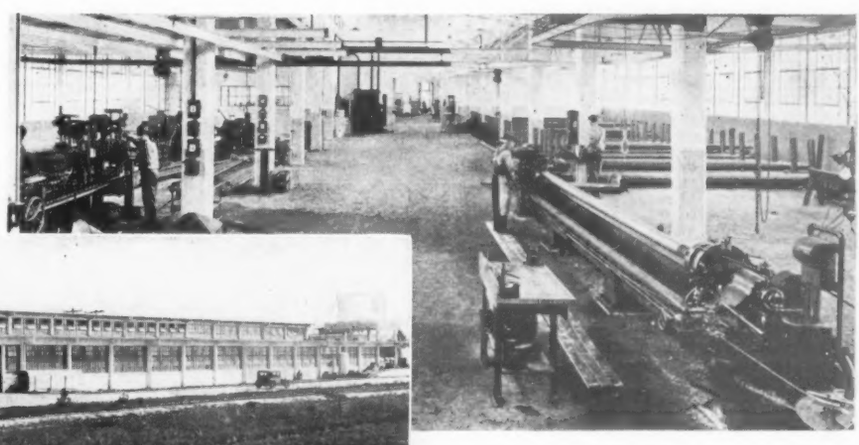
PHILADELPHIA—Adelphia Bronze & Aluminum Foundry Inc. has been incorporated with $10,000 capital by Edwin A. France, 6933 Tulip street, Tacony, to manufacture and sell bronze, aluminum and similar products.

WARREN—George Horsefield, who recently established the Auto Body Works here, has plans under way for construction of an addition and the installation of machinery and equipment.

WEST POINT—H. & H. Commercial Body Corp. has been incorporated with $50,000 capita lby W. H. Hangey, 214 South Fourth street, North Wales.

Demand for Oil-field Equipment Builds New Plant

Completion by Layne & Bowler Co., Houston, Tex., of a new factory, built at a reported cost of $500,000, including new equipment, marks an important step. The company was organized in 1907, taking over the business of Layne & Woodburn, a partnership formed in 1904.



Pa., to manufacture, repair and deal in passenger vehicles and bodies.

New Jersey

BELLEVILLE—Wallace & Tiernan Co. has plans for an addition for the manufacture of chlorine apparatus. Expenditure will approximate $150,000.

BOUND BROOK—George A. Just Co., 239 Vernon avenue, Long Island City, N. Y., structural steel fabricator, has purchased a 15-acre tract near here for the erection of a large plant.

IRVINGTON—Royal Tools & Engineering Co. Inc. has been incorporated with $25,000 capital by David Silver, 31 Clinton street, Newark, N. J., to manufacture electric motors.

NEWARK—Universal Tool & Mfg. Co. has been incorporated with 2500 no par shares by Arthur T. Vanderbilt, 790 Broad street.

NEWARK—Norman Products Corp. has been incorporated with 5000 no par shares by Reed & Reynolds, 810 Broad street, to manufacture belt-lacing machines.

Ohio

AKRON—Ohio Edison Co., A. C. Blinn general manager, will construct a power line from Toronto, O., to Akron and erect a power substation in East Akron. Cost of the entire project approximates $3,000,000.

CINCINNATI—Standard Pattern Works, 1208 Queen City avenue, will build a new plant on Spring Grove avenue at a cost of about $10,000. Howard McClorey, Fourth and Main streets, architect, is taking bids.

CLEVELAND — Cleveland Corrugated Box Co., 5305 Sweeney avenue southeast, will move about Sept. 1 to 7275 Wentworth avenue southwest, where it has leased 35,000 square feet of floor space, doubling its present plant size. Contract for alterations costing $45,000 has been awarded. Equipment will be added to double present output.

CLEVELAND—American Steel & Wire Co., J. S. Keefe president, Rockefeller building, will build a steel mill addition at its Cuyahoga works, Harvard avenue and Forty-second street, as a part of the expansion program recently noted. Unit will be 80 x 700 feet, costing about $150,000. Contract has been let to Stevens Construction Co., Erie building. (Noted April 10.)

COLUMBUS—City is considering construction of a municipal light plant at a cost of $150,000 on Dublin avenue. Will not mature until next year.

GALION—United States Steel Vault Co., Harding way, recently noted as holding building plans in abeyance, has started work on a new plant at South and Wood streets. Structure will be 90 x 310 feet, and will cost approximately $100,000. General contract has been awarded to Austin Co., 16112 Euclid avenue, Cleveland. (Noted May 29.)

GENEVA—American Fork & Hoe Co., G. B. Durrell president, Keith building, Cleveland, has awarded contract to Rice Jones Co., Union building, Cleveland, for a plant unit, 75 x 250 feet. Cost is estimated at about $75,000. New unit will increase warehouse facilities and provide for an extension of fishing rod and bait manufacturing division.

MARTINS FERRY — Chemical plant of Sulphiro Corp. recently was completely destroyed by a fire with loss of between $75,000 and $100,000, including machinery.

NORWALK—Segal Lock and Hardware Co. Inc., 159 Leonard street, New York, which some time ago purchased the Norwalk Lock Co., will remove its entire Brooklyn, N. Y., plant here and concentrate lockmaking activities here. Over 200 employees will be added.

TOLEDO — Modern Hardware Mfg. Inc. has been incorporated with $15,000 and 150 no par shares by Chittenden & Daniells, 610 Home Bank building.

TOLEDO — Moto Meter Gauge & Equipment Corp., Long Island City, N. Y., is moving offices and plant of its automotive division to the Moto Meter factory here.

WARREN—Packard Electric Co. proposes to erect a 1-story wire-drawing plant.

Indiana

CHESTERTON——Bradley Brothers are reported to be planning an addition to their garage and machine shop.

INDIANAPOLIS—Cartwright Automatic Gear Shift Corp., has obtained a plant site and will start production immediately.

SOUTH BEND—Indiana & Michigan Electric Co. has awarded contract to John Nelson Co., 712 North Niles street, for a 40 x 60-foot power substation at Colfax and Kaley streets. Cost is estimated at over $40,000.

Michigan

DETROIT—Peninsular Grinding Wheel Co., 729 Meldrum street, has awarded contract to Bennage-McKinstrie Co., 4612 Woodward avenue, for an addition and new unit.

DETROIT—National Door-Check & Mfg. Co., 7427 West Chicago boulevard, has been incorporated with 150,000 no par shares by Wayne C. Atlee, 3795 Vicksburg avenue, to manufacture hardware specialties.

DETROIT—Crucible Steel Co. of America, Oliver building, Pittsburgh, has secured an industrial site at Hubbard and Michigan avenues, and has leased a warehouse building containing approximately 35,000 square feet of floor space.

JACKSON — State administrative board, Detroit, has authorized expenditure of over $30,000 for new boilers and stokers in the old state prison here.

JACKSON—Jackson Fence Co. has started construction of a plant addition to be used chiefly for storage. Unit will be at Francis street and Michigan Central railroad and will add 7000 square feet of floor space.

MANISTIQUE—Inland Lime & Stone Co. has plans for a power unit to cost about $100,000.

OWOSSO — Owosso Airport Co., Robert C. Wilcox president, will spend $15,000 for field improvements and construction of a hangar unit here.

ROYAL OAK—Rawson Brake & Equipment Corp., 20171 Derby street, has been incorporated by Clifford E. Rawson to engage in general manufacturing business.

Illinois

BELLEVILLE—Plant of Enterprise Foundry Co. recently was damaged by fire. Loss is estimated at $1500.

BELLEVILLE—Perry Coal Co. proposes to build tipple and mechanical buildings at a cost of about $100,000.

BELLEVILLE—Baker-Nagle Foundry Co. has a building permit for a molding shop to cost $1200. Bauer Brothers Construction Co. has been awarded the contract.

CHICAGO—Plant of Illinois Malleable Iron Co., 1801 Diversey avenue, recently was severely damaged by fire. Loss is estimated at $25,000.

CHICAGO—Appleton Electric Co., 1713 Wellington avenue, will erect a 2-story, 90 x 90-foot addition, connecting two present units.

CHICAGO—A-1 Refrigerator Repair Co., 738 West Forty-third street, has been incorporated with $20,000 capital by John M. Wheeler, to deal in refrigerators.

CHICAGO—Matica Docrovac Machine Co., 508 South Dearborn street, has been incorporated with $40,000 capital by William J. McGah, 77 West Washington street, to deal in beauty parlor equipment.

CHICAGO—Houck Equipment Co. Inc., 178 West Adams street, has been incorporated with $15,000 and 600 common shares by Floyd E. Houck, to conduct a general machinery equipment business.

CHICAGO — Commonwealth Edison Co., 72 West Adams street, has a building permit for alterations at one of its plants at 2050 Grove avenue. H. V. VonHolst, 20 West Wacker drive, is architect. Cost is estimated at $23,000.

CHICAGO — Standard Transformer Corp., 852 Blackhawk street, has been incorporated with $50,000 capital by A. L. Shapiro, First National Bank building, to manufacture and sell transformers.

CHICAGO—Power plant unit, 66 x 123, will be erected by Children's Memorial hospital, 707 Fullerton avenue, on a site at 2349 Lincoln avenue. Pucky & Jenkins, 400 North Michigan avenue, are

architects. Cost is estimated at $110,000.

CRYSTAL LAKE—Crystal Lake Foundry has been established, manufacturing brass, bronze and aluminum castings.

NORTH CHICAGO—Delta Stoker Co., Ft. Commonwealth avenue, has been incorporated with $100,000 capital by Hyde, Westbrook, Watson & Stephenson, 10 South LaSalle street, Chicago.

ST. ELMO—Four planes, one glider and a hangar unit containing tools at Wright Flying school field here were recently destroyed by fire at a loss of $25,000.

Southern States

DOVER, DEL.—Monoblock Corp. has been incorporated with 1000 common shares by United States Corporation Co. to make governors for engines.

WASHINGTON—Fred S. Gichner, 1214 D street northwest, may build a plant and office unit for an ornamental iron works at 1210 Twenty-fourth street northwest. Cost is estimated at $55,000.

WASHINGTON—A. L. Flint, general purchasing officer for Panama canal, Washington, will receive bids until Aug. 20 for pumping units, transformer, compensator, valve-seating machine, two hand-power winches, managanese steel jaws, electric water heaters, electric motors, and electrical supplies.

MIAMI, FLA.—Power installation, including a diesel engine unit, will be made in the Alcazar hotel, Henry J. Smith manager. Cost is estimated at $30,000.

MIAMI, FLA.—Merrill Stevens Dry Dock Co., 1270 Northwest Eleventh street, has started work on a machine shop at its plant. Structure will be of two stories, 30 x 150 feet. Approximate cost, $40,000.

LOUISVILLE, KY.—Standard Sanitary Mfg. Co., 1541 South Seventh street, and 18 East Forty-fifth street, New York, is reported to be planning the manufacture of metal caskets.

GREENVILLE, MISS.—City council has authorized a bond issue amounting to $30,000 for municipal airport.

LAUREL, MISS.—C. P. Limbert Furniture Co., Holland, Mich., has let general contract for a 1-story plant 100 x 1000 feet, to Arch Construction Co., New Orleans. Cost is estimated at $175,000. Limbert company is reported to be inquiring for machinery to equip the plant.

MERIDIAN, MISS. — City has let contract to J. E. Watkins & Son for a hangar and terminal unit. Frank Fort, 3219 Twenty-third avenue, is architect. Cost is estimated at over $20,000. W. H. White is city clerk.

WINSTON-SALEM, N. C.—Southern Steel Stampings Inc., has been incorporated with $100,000 capital by L. W. Lawrence, 1149 West Fourth street.

CHARLESTON, S. C.—City fire department is having a new machine shop constructed for repairs of apparatus. Unit is to be one story, costing $2500.

COLLIERVILLE, TENN. — Manncraft Airplane Co., whose incorporation recently was noted, advises through H. W. Mann Jr., general manager, that the company will erect a plant, 60 x 120 feet, and will add other units later. Equipment needs will include lathes, drill presses, and electric motors. (Noted July 10.)

RICHMOND, VA.—James W. Kendler & Sons Inc. has been incorporated by James W. Kendler, 713 West Main street, to deal in sheet metal.

CLARKSBURG, W. VA. — Weirton Steel Co., Weirton, W. Va., has suspended operations temporarily at its local plant following an explosion in the steam plant recently. Four battery type boilers were destroyed and the steam plant was wrecked. Damage is estimateed at more than $50,000. E. E. Paddock is general manager of the plant.

Missouri

KANSAS CITY—Motor Fog Mfg. Co. has been incorporated with $25,000 capital by H. A. Abbott, 501 Knickerbocker place, to manufacture a device to be attached to motors and gasoline engines.

ST. LOUIS—Liberty Foundry Co., 7600 Vulcan street, manufacturer of gray iron castings, advises through W. T. Mellow, vice president, that the company recently suffered a fire loss of $5000 which damaged the elevators to the charging floor. Damage is being repaired by their own maintenance department without interruption of plant operations. Additional building material or equipment will not be needed.

UNIVERSITY CITY — Cleone Motors Inc., 6405 Maple avenue, has been incorporated by E. J. Hanger, 5366 Cabanne avenue, St. Louis, to manufacture airplanes, airplane motors, and dirigible balloons.

Oklahoma

BARTLESVILLE — Bart Products Co. has plans for plant additions totaling 15,000 square feet, including grinding department and machine shop expansion. F. E. Fisher is general manager.

CRESCENT CITY—City is reported to be inquiring for one 10-horsepower motor, one 30-horsepower motor, one triplex pump, 70 gallons per minute, and one centrifugal pump, 350 gallons per minute.

OKLAHOMA CITY—Butt's Electrical Works, E. A. Butt president and manager, has let contract for a machine shop, 59 x 140 feet, at 101 North Pennsylvania avenue.

TULSA—Howard N. Hansen Co., Howard N. Hansen president and manager, contemplates building or leasing a shop to manufacture patented oil field production specialties.

Texas

DALLAS—John E. Mitchell Co., 3800 Commerce street, will erect a second-story addition to its shop building, 100 x 350 feet. Company manufactures cotton gin machinery.

FT. WORTH—Texas Electric Service Co. has plans to extend its power facilities at a cost of $450,000, part of which will be for substations.

HOUSTON—Houston Independent school district, 1600 Washington avenue, is taking bids for a shop building for Taylor vocational school.

MEXIA—Federal Supply Co.'s machine shop recently was damaged by fire. Loss is estimated at $20,000. Company makes oil well supplies.

POST—Chamber of Commerce, George Sanson secretary, is arranging to develop the local airport, and will convert one of the present buildings into a hangar.

SAN ANTONIO—San Antonio Public Service Co. will add to its generating plant capacity.

Wisconsin

CEDARBURG—Cedar Creek Hydraulic Co. is starting preliminary work on a new hydro-electric generating plant on Cedar creek, at the outlet of Big Cedar lake. Company has been formed by officers of Cedarburg Wire & Nail Co., Cedarburg Supply Co. and Cedarburg Woolen Mills.

FOND DU LAC—B. & L. Co., formed by C. H. Brugger and Charles F. Larzelere, is starting production of a ring tip for fishing rods, made of stainless steel.

FOND DU LAC—C. J. Fay, city clerk, will take bids until Aug. 27 for two 3,000,000-gallon electrically driven pumps, one 10-inch deep well turbine, 1100 to 1400 gallons per minute capacity, one 500,000-gallon steel storage tank, and electrical control equipment. Alvord, Burdick & Howson, 8 South Dearborn street, Chicago, are consulting engineers.

MILWAUKEE—Milwaukee Gear Co., Emil G. Borisch general manager, 1222 Third street, is considering erection of a new plant on South Pierce street.

MILWAUKEE—Lakeside Bridge & Steel Co., North Milwaukee, will add electric cranes to its equipment as a part of its expansion program, which calls for the expenditure of $500,000.

MILWAUKEE—County board of supervisors has authorized construction of hangar No. 3 at the county airport, 100 x 100 feet, at a cost of about $40,000. Bids will be taken late in August. William J. Cary is county clerk.

NEENAH—Kimberly-Clark Co., 128 North Commercial street, manufacturer of paper, is taking bids through its engineering department for a machine shop, 50 x 60 feet, and a 2-story pulp building, 60 x 150 feet, at its Lakeview mill. Total cost of the project is estimated at $75,000.

RIVER FALLS, WIS.—State Teachers college will build a 1-story workshop,

100 x 100 feet. Frank Luberg & Son have been awarded the contract. Arthur Peabody, state architect, Madison, Wis., is architect.

SPOONER—Council has voted to replace present engine equipment of the municipal light and water plant by a diesel engine unit. George B. Sage is city clerk.

Iowa

CEDAR RAPIDS—La Plant-Choate Mfg. Co., manufacturer of tractors and steel dump wagons, is building a 1-story 35 x 140-foot plant addition.

Kansas

LAWRENCE—Kansas Power & Electric Co. will build units here, including a repair shop. Horner & Wyatt, Board of Trade building, Kansas City, Mo., are architects and engineers.

Colorado

BOULDER—Public Service Co. of Colorado, Denver, will build a power plant here. Cost is estimated at $100,000.

PUEBLO—Colorado Fuel & Iron Co. will increase facilities for producing steel grader blades.

Pacific Coast

SEATTLE—Boeing Air Transport Inc., advises through Harold Crary, advertising manager, that combination hangar-administration buildings costing $35,000 each will be constructed at Iowa City, Iowa; North Platte, Nebr.; Rock Springs, Wyo.; Elko, Nev. and Reno, Nev. Each unit will be 80 x 130 feet, of similar design, and will provide for a machine shop. A hangar-depot is to be constructed at Omaha, Nebr., at a cost of $60,000. Contract for design and construction has been awarded to Austin Co., 16112 Euclid avenue, Cleveland. Another unit may be erected at Sacramento, Calif.

Dominion of Canada

EAST WINDSOR, ONT.—Canadian Lamp & Stamping Co. has started construction of a plant on Seminole street.

HAMILTON, ONT.—Plant of Canada Iron & Foundry Co., owned by Canadian National railways, recently was destroyed by fire at a loss of $100,000.

HAMILTON, ONT.—Dominion Foundries & Steel Ltd., C. W. Sherman general manager, is asking bids on special equipment for manufacturing plate steel. Estimated cost about $250,000.

NEW TORONTO, ONT.—Anaconda American Brass Ltd. is improving and adding to its plant at a cost of $200,000.

NIAGARA FALLS, ONT.—Scott Pump Co., 645 Atlantic avenue, Rochester, N. Y., is reported considering erection of a plant here.

ST. CATHERINES, ONT.—Thompson Products Inc., manufacturer of automotive parts, 2196 Clarkwood road, Cleveland, with local office at 136 St. Paul street, advises that construction activities on a new plant here, suspended last fall, have been resumed. It is planned to have the plant in operation this fall.

TORONTO, ONT.—Hewitt Mfg. Co. Ltd. has been incorporated with $100,000 and 20,000 no par shares by Wilfred Field, barrister, 53 King street west, to manufacture and deal in refrigerators, engines, dynamos and machinery.

ROTARY SHEARS—Quickwork Co., Ltd., 1074 Queen street east, advises through E. Fryer that the plant recently noted as planned, will require machinery and equipment, specifications to be determined later. (Noted July 31.)

TORONTO, ONT.—Thornycraft (Canada) Ltd., division of J. T. Thornycraft & Co. of London, Eng., and Simms Motor Units Ltd., 85 Church street, branch of Simms Motor Units Ltd., London, Eng., will establish plants in a building being erected at 484 Dundas street west, here. Thornycraft company manufactures motor trucks and marine motors. Simms company manufactures magnetos and other automotive equipment.

MOUNT ROYAL, QUE.—City council has approved plans for construction of a light plant, for maturity next year. Estimated cost, $150,000. F. W. Bates is secretary of the council.

POINT ST. CHARLES, QUE.—Canadian National railways, Board of Trade building, Montreal, Que., has awarded contract to St. George Construction Co. Ltd., 4820 Fourth avenue, Rosemond, Que., for a foundry and pattern shop here. Cost is estimated at approximately $150,000.

REGINA, SASK.—City council recently authorized erection of a power substation, with equipment, and purchase of a boiler for the present power plant. D. A. R. McCannel is city commissioner.

SASKATOON, SASK. — Blanchard Foundry on Twenty-second street recently was damaged by fire. Loss is estimated at $2000.

SWIFT CURRENT, SASK.—City council will sell the municipal power plant to Saskatchewan power commission, Regina, Sask. A new power unit of 1200 horsepower, costing about $100,000, will be ordered by the commission. L. A. Thornton is chairman.

New Trade Publications

CRANES AND DERRICKS—Bedford Foundry & Machine Co., Bedford, Ind., has issued a bulletin showing a number of installations of its cranes and derricks in industrial establishments to reduce labor of handling materials.

GRAPHIC INSTRUMENTS — Esterline-Angus Co., Indianapolis, devotes a current bulletin to examples of savings made with graphic instruments to record actual labor performance. Graphs are shown to indicate methods to which the instruments can be applied.

VALVES—Benefits of metallurgical control in the production of better valves is made the subject of a bulletin by the Edward Valve & Mfg. Co., East Chicago, Ind. These are especially required in valves used for high pressure and high temperature.

REMOTE CONTROL—Brown Instrument Co., Philadelphia, in a current bulletin describes and discusses the de Florez system of remote manual control handled by the company. Illustrations show the mechanism and diagrams explain its operation.

STEEL—American Institute of Steel Construction calls attention in a current bulletin to the heat-resisting properties of structural steel when properly insulated. It shows that steel alone makes possible the safety and security of buildings of great size and height.

BELT CONVEYORS—Link-Belt Co., Chicago, has prepared a flexible-covered book containing data on belt conveyors, to facilitate selection and application of proper types for handling any material in the quantities desired. It covers all data needed in deciding on proper equipment of this nature.

ROTARY SHEARS—Quickword Co., St. Marys, O., is distributing its catalog of rotary shears, which it has made complete as possible to cover the shearing of materials by use of its various devices. Specifications and illustrations are used liberally to supplement the text.

AUTOMATIC SCREW MACHINES—National Acme Co., Cleveland, has followed a new line in its handbook for operators of its model C automatic screw machines. Instead of the usual halftone reproductions to illustrate parts of the machines line drawings are used, affording phantom views and greater clearness of detail. It is the first operators' handbook on this model of machine.

INDUSTRIAL ENGINEERING—Arthur G. McKee & Co., engineers and contractors, Cleveland, are distributing an illustrated booklet covering the service of the company to industry, illustrating devices it has developed and showing numerous installations. The wide range of service offered by the company's engineers is covered. Of much interest to the steel industry is the showing of special equipment designed for various purposes in connection with blast furnaces and steel plants.